The Builder.

VOL. LIV. No. 2865. SATURDAY, JUNE 2, 1888.

ILLUSTRATIONS.

Thorne House, near Yeovil.—Mr. T. G. Jackson, M.A., Architect ..... *Single-Page Typo-gravure.*
New Church at Curdridge, Hants.—Mr. T. G. Jackson, M.A., Architect ..... *Single-Page Typo-gravure.*
Porch of St. Mary's Church, Portsea.—Mr. A. W. Blomfield, M.A., A.R.A., Architect ..... *Double-Page Ink-Photo.*
Inglewood Bank, near Penrith.—Mr. George Dale Oliver, A.R.I.B.A., Architect ..... *Double-Page Photo-Litho.*
Houses in Cadogan-square.—Mr. Edwin T. Hall, F.R.I.B.A., Architect ..... *Two Single-Page Photo-Litho's.*

Block in Text.

New Premises for Messrs. Müller & Co., No. 62, High Holborn, W.C.—Mr. H. Huntly-Gordon, Architect ..... *Page* 396

CONTENTS.

Painting and Sculpture at the Salon 387
Notes 389
Architecture at the Royal Academy.—V. 391
The Annual Report of the Metropolitan Board of Works 392
Royal Institute of British Architects: Recent Legal Decisions affecting Architects 393
The Orientation of Churches 395
Architectural Association Visits 395
New Business Premises, No. 62, High Holborn, W.C. 396
Curdridge Church, Hants 396
Thorne House, near Yeovil 396
Porch of St, Mary's Church, Portsea 396
Inglewood Bank, near Penrith 396
Houses, Cadogan-square, London 396
The Greek and Roman Stage 397
London and Middlesex Archæological Society 397
Association of Municipal and Sanitary Engineers and Surveyors: Meeting at Leamington 398
Archæological Societies 398
Water Supply at Pontefract 398
London Theatres in 1596 399
"The Ventilation of Sewers" 399
The Thames and London Sewage 399
The Student's Column: Iron 399
Books: Forbes's Course of Lectures on Electricity (Longmans); Bottone's Electrical Instrument-making for Amateurs (Whittaker); Lynch's Redress by Arbitration (Wilson & Co.); Lobley's Geology for All (Roper & Drowley) 400
Recent Patents 400
Recent Sales of Property 401
Meetings 401
Miscellanea 401
Prices Current of Materials 403

Painting and Sculpture at the Salon.

FOR any one who has watched attentively the successive exhibitions in Paris during the last eighteen years, the fluctuation of artistic taste during this period must have offered an interesting and significant spectacle. During the period immediately following the "Année Terrible" all the interest of artists and the public was concentrated on the scenes of war and invasion so powerfully treated by MM. de Neuville and Detaille, compared with which works of allegory, of history, or of *genre* were deemed tame and insipid. Then appeared, as a kind of revelation, the scenes of real life and the novel treatment of colour shown in the works of that robust and original genius, Bastien-Lepage; paintings which defied all received conventions, but which were full of the poetry of truth and nature. Then followed in the field M. Puvis de Chavannes, who, after being for a long time regarded as a mere visionary, has succeeded at last to a brilliant reputation as a decorative painter, whose works, with their pure line and luminous scheme of colour, appear especially adapted to harmonise with architectural design. The work of these two painters formed a kind of double revelation to the young generation of artists, who began to perceive that artistic truth was not the exclusive possession of the *ateliers* of the Rue Buonaparte.

The indecision of the earlier years of this period seems now to have disappeared, and the new school of French artists have found the way wherein to walk; one in which, it must be admitted, a good many foreign artists have preceded them. Bastien-Lepage and Puvis de Chavannes have numerous followers; many, certainly, who seem to reproduce the defects rather than the merits of the two masters; but, nevertheless, the conventional Greco-Roman school seems very likely to be extinguished altogether amid the crowd of daylight scenes of modern life which, during the last two years especially, have so largely predominated. Last year this tendency towards modern subjects treated "*en plein air*" was very marked; this year it is even more so, and the new painters of this school who have appeared seem to show a steady progress and development of their powers.

One result of this increase of new talent is to render the award of the "Médaille d'Honneur" at the *Salon* an increasingly difficult matter for decision; it is supposed to lie this year between M. Benjamin Constant and M. Humbert. The large triptych painting by the latter artist, under the title "Maternité," is a powerful work with a sad moral; in the centre is a mother with two infants sleeping in her arms; the side panels show the girl, emaciated and ill-clad, working in the fields, the boy a dead soldier, a nameless and obscure victim of duty; the dream of the future shown between the two stern realities. This is a remarkable and impressive work, in spite of the cold grey colouring which characterises M. Humbert's later manner. The immense painting by M. Benjamin Constant, intended for the "Salle du Conseil Académique" of the new Sorbonne, is also divided into three parts. In the centre is shown a semicircular colonnade, behind which is seen the dome of Richelieu's church, and in front of which are seated the Deans of the various Faculties, in their red official robes, grouped around their Rector, M. Gréard. In the right compartment a group of aged men, with a background of foliage, represent the Sciences, and in the left compartment Literature is symbolised by a group of female figures, one of whom declaims to her listening companions. This painting, very vigorous in execution, and marked by the painter's usual warmth and brilliancy of colour, is, in a decorative sense, very effective.

The decoration of the Sorbonne is represented this year by three other artists, MM. François Flameng, Chartran, and Duez. The work of the first-named artist, placed in the main entrance vestibule, attracts great attention. It is intended for the grand staircase of the Sorbonne, and is the pendant to the "Histoire des Lettres" exhibited last year. The middle panel shows groups of workmen standing about the scaffolds and looking on at the laying of the first stone of the Church by Richelieu, who, surrounded by a group of priests, is seen in the middle distance; the towers and spires of Paris fill up the background. In the left compartment some of the eminent men of the French Renaissance,—Dolet, Marot, Ronsard, Amyot, La Boëtie, Brantôme, &c., are grouped under a portico with an arcade looking into the open air; in the right panel we see Henri IV. and his *suite* received by the members of the University of France. This assemblage of persons and costumes has considerable archæological interest, and, as a composition, the figures group well with the architectural adjuncts, but the figures considered individually are mannered and wanting in character, and carelessly designed. The same may be said of the work of M. Duez, which exhibits an easy facility rather than carefully-studied work, and leads one to ask how it is that artists in executing official commissions so rarely do themselves full justice. In M. Duez's work, in which Virgil is represented musing in an Italian landscape, there is none of the impression of life and reality that distinguished the same painter's work of last year; the landscape is but a pale conventional reflection of the warmth and glow of Italy, and the figure is a mere impalpable vision with no life, more like the ghost of Virgil as he might have appeared to Dante. This picture is intended for the "Salle des Actes" of the Faculty of Letters. The less important work by M. Chartran is for the principal staircase, and represents Louis IX. at the Abbey of Royaumont. The king is seated, and listening to Vincent de Beauvais, who is standing, with his dark monastic robe strongly relieved against the almost white wall behind. This is an able work, and the figures are carefully studied and characteristic. In the same vestibule M. Dulupe exhibits, under the title, "Trinité Poétique," a gigantic apotheosis of Victor Hugo, flanked by figures to right and left representing the genius of Lamartine and De Musset; a sufficiently odd combination. The effect of the work, rather striking in design, is weakened by the cold blue tone prevalent in the colouring. The painting by M. Ehrmann, which hangs opposite, and symbolises "the Literature, Arts, and Sciences of Antiquity," though in the old conventional Classic school, is a more attractive work. This is in reality a cartoon for Gobelins tapestry, to be executed for the National Library, and every portion, the grouping, the colour, and the ornamental border, is designed with due regard to that method of execution, with thorough knowledge of this species of decoration and of the peculiar conditions of the "fabrique." M. Raphael Collin's "Soir d'Été" is another good example of the same kind of decorative design.

The Municipal Council of Paris, which, in opposition to the Institut, has for ten years past been endeavouring to conduct competitions in painting and sculpture, ought to be undeceived as to its efforts in the promotion of art, in contemplating the triptych by M. Comerre, one of its prize-winners, who has been commissioned to decorate the Mairie of the IVth Arrondissement. A young girl gathering up flowers in the folds of her robe represents Spring,

and a naked child shivering by a fire, to whom an old rustic seems to be telling a story, represents Winter. This kind of commonplace as a decoration for an important public building affords a ludicrous practical argument for those who disbelieve in the competition system ; nor does the execution of the work in any way redeem the absurdity of the conception.

The painting by M. Gerôme, entitled "Le Poète," is an odd association of classic nudity with modern costume, beautifully executed, but not otherwise of much interest. M. A. Maignan's "Les Voix de Tocsin" is pre-eminent by its enormous size, to which the "Titans" of M. Eugène Delacroix furnishes in this respect a pendant ; each shows the same exaggeration of attitudes and grouping of contorted and entangled figures, and the same heavy and sombre colouring. The two compositions by M. Pierre Lagarde, "Orphée" aad "St. Hubert," are bad and amateurish imitations of M. Puvis de Chavannes. The "Baigneuse" of M. Bouguereau is an epitome of all his excellencies and shortcomings : the trees, the water, the figure, all painted with minute care ; the figure admirably drawn, but without a breath of real life in it. His "Premier Deuil" has the same unreal and conventional effect ; the lamentation of Adam and Eve over their dead son has no feeling in it that touches the spectator : clever Academic painting, and no more.

"Religious" painting is little represented this year. Except the "Ste. Famille" of M. H. Martin, a pretty composition, bathed in soft light, one can only mention the "St. Denis" of M. Delance, a figure with his head in his hands, walking in the midst of some peasants, who seem reasonably surprised at this unusual spectacle ; the talent of the artist hardly avails to render such a subject of any interest. In the department of historical painting, the picture, by M. Julian Story, of "Le Prince Noir devant le Cadavre du Roi de Bohême à la Bataille de Crécy," is a fine situation, ably treated, and without exaggeration.

Among military pictures (much less numerous, be it noted, than last year), M. Le Blant's "Bataille de la Moskowa" is the only Government commission. There is much life and vigour in this work, intended for the salle d'honneur of the 9th regiment of the line. In two works, entitled "La Halte" and "La Fin de l'Averse," M. Protais has painted with his usual ability the soldiers of the type we have been familiar with for many years. The "Salut à la Victoire" of M. Beaumetz is an immense composition, which forms a kind of complement to the "Guerre" by M. Roll, exhibited last year, with which, however, it does not by any means compare favourably. One of the popular successes of this year is the "Le Rêve," by M. Detaille ; it shows the camp-fires throwing a fitful light on the long lines of soldiers sleeping in their blankets and dreaming of the wars of the Republic and the Empire, whose vanished armies float through the sky in a vision, drums beating and colours flying ; the vision is, however, rather too indistinct and confused to tell its story well. The brilliant talent of this artist is better exhibited in the painting of realities than fictions ; the minor details are splendidly painted, with most conscientious care, but M. Detaille is an executant rather than an ideal poet.

Among the paintings of *genre*, as usual the most numerous class, the progress of the new school and its ultra-modern element is more marked than ever. The picture by M. Lhermitte is one of his most masterly works. It is a harvest scene, where a reaper is reclining on the cut corn contemplating with a pleased smile his wife standing before him nursing her infant. The scene is of an Old Testament simplicity, the figures painted in a broad and grand style, and the whole lighted by a warm sunlight. There is the same power of design and colour in the "Jeune Fermière" of M. Roll, a milk-maid with her pail, with a beautiful head standing out boldly against a background of intensely green foliage. M. Roll, it may be observed, is a *genre* painter of remarkable versatility, and has been as successful in depicting such subjects as a workmen's strike or a scene in battle as in quieter subjects of home life such as the one here referred to. Among other works in the class of *genre* may be mentioned M. Cazin's "Fin de la Journée," a work full of simple poetry ; the "Déjeûner des Terrassiers" of M. Binet, the charming painting of a young girl carrying a load of dead wood, which M. Adan entitles "Novembre" ; and the picture by Mr. Ridgway Knight, representing two young girls on the bank of a stream waiting for the ferry "Le Passeur."

M. Falguière exhibits, under the title "L'Incendiaire," a rough sketch of a picture which will hardly add to his reputation, and his "Mendiants Espagnols" is disagreeably realistic, and, perhaps, exaggerated. As more truthful works may be mentioned the "Vieilles Finlandaises" of M. Edelfelt and the "Pilotes" of M. Melchers ; the "Jeune Mère" of Mdme. Demont-Breton and the amusing "Départ pour la Noce" of M. Brisport, who excels in rendering the types of the Parisian *ouvrier*. M. Pelez, who makes a speciality of social miseries, gives us this time "Grimaces et Misères," the parade of a troop of mountebanks : emaciated children weeping in their tattered tinsel, the old musicians obviously starving, grotesque clowns, wretched-looking dwarfs, &c., constitute a curious scene of melancholy realism.

Among the paintings of still life should be mentioned in the first rank the exhibits of M. Blaise Desgoffe. His Cellini vase and his paintings of enamel work are executed with almost incredible realism of execution. The game piece by M. Vollon is also a remarkable work, and the flower and fruit subjects of MM. Bergeret, Jeannin, and Grivolas merit special notice.

Coming from these to animal paintings, we greet again the work of M. Charles Jacques, who has not exhibited for a long time, but who re-appears now from his retirement with a superb picture, proving that no one knows better what can be done with a flock of sheep in pictorial treatment, or what variety of expression can be given to their placid countenances. The "Berger qui tricote," by M. le Poitevin, the "Gardeuse de Moutons," by M. Vayson, and the "Vaches Normandes" of M. de Vuillefroy, are admirably truthful works ; and the two works by M. J. Lewis Brown, especially "Before the Steeplechase," should be looked at, as also a small picture by M. de Penne representing a carriage attacked by wolves, in a snow landscape.

In landscape, the talent of MM. Français and Harpignies shows no signs of decline. Many artists of the younger school might envy the freshness of feeling and style in the "Sous Bois" of the first-named artist, and the "Torrent dans le Var" of the second. One cannot pay the same compliment to MM. Cabal, Ciceri, de Curzon, and Bettel, nor even we fear to M. Hanoteau. On the other hand, the younger school of landscape-painters, which increases in numbers year by year, undoubtedly includes a great deal of real talent. Among their works we may mention the Breton landscapes by M. Bernier, an effect of snow by M. Billotte, another winter scene by M. Binet, the Provençal landscapes of MM. Casille, de Canis, and Montenard, so full of light and reality, the beautiful "Soirée d'Automne" of M. Courant, the "Mare sous Bois" of M. Dardoize, the "Cour de Ferme" of M. Gagliardini, a storm effect very powerfully given by M. Yon, and a good many others which we have not space to mention.

Among the painters of sea-pieces, M. Tattegrain is taking a foremost place. His picture, "Les Débris du 3 mât Magestas," is one of the finest works of the year,—a wreck scene painted with great dramatic force and the highest power of execution and technique. Among other works of this class may be mentioned the "Port d'Anvers" by M. Grimelund, the views of Rouen and La Rochelle by M. Lapostolet, that of "Treport" by M. Le Sénéchal, "Le Départ sur la Tamise" by M. Walden, and views of Marseilles by M. Oliv

Among portraits, that of M. de Goncourt, by M. Raffaelli, has obtained what may be called a "succès de curiosité." The general tone is too grey, and there is an exaggeration of details which is bad ; but the likeness is remarkable, and the head full of life and expression. The literary and artistic world is abundantly represented in portraiture. The head of M. Alexandre Dumas, by M. Saintin, rather hardly painted, appears again on a smaller scale in a composition by M. Laissement, entitled, "Lecture à la Comédie Française," in which we can recognise the principal authors connected with the "Maison de Molière." MM. Clairin and T. P. Laurens have both portrayed M. Mounet-Sully in the part of *Hamlet :* the second is the best likeness. M. van Beers has painted Mdme. Bernhardt in the part of *Tosca*, and M. Courtois has produced a charming portrait of Mdlle. Alice Regnault. Among others may be noticed the portrait of the organist, César Franck, by M. Rougier ; the painter Yon, by M. Sauvage; M. Henri Cain, by Mdme. Breslau ; and the painter Roll, by M. Aviat, who has finely rendered the *spirituel* physiognomy of his sitter. The portrait of the President of the Republic, by M. Yvon, is an official picture, naturally installed in the place of honour, occupied formerly by other heads of the State whom the same artist has successively painted with the same official solemnity. The portrait of M. Jules Ferry is a masterly work by M. Bonnat; the likeness is perfect, though the style somewhat coarse and realistic. The young girl painted by M. Carolus Duran, seated, with her hands crossed, is, we believe, a portrait of his daughter, whose beautiful head and long dark hair he has done full justice to. The same artist exhibits a fine portrait of M. Française, the landscape painter. The portrait of Mdlle. Duran was, if we mistake not, exhibited in the Royal Academy last year. An absurdly theatrical portrait of General Boulanger, by M. Bin, is not calculated to increase the reputation of either the subject or the painter ; nor do we any more approve of the two portraits of ladies exhibited by M. Cabanel, in which the over-finish bestowed on the costume appears to render the portrait itself of quite secondary importance. Mr. [illegible] Herkomer's portrait of Mr. Hubert Herkomer (also in the Academy last year) is much admired for the forcible painting of the head and fine modelling of the hands. The portrait of a young blonde girl, by M. Henner, is the repetition of a type which has appeared year by year for we know not how long, in the *Salon*. We may mention also a female portrait by M. Amand Gorot, that of a Parisian lady whom M. Gervex has disguised as a Japanese, and the portraits of ladies by MM. Machard, Aublet, and Mathey.

To come to sculpture, we find among the monumental works the most important place taken by the sculpture, by M. Caravanniez, for the Chambord monument, of part of which we have already spoken in describing the architectural exhibits At the four angles of a pedestal are placed the statues in bronze of Bayard, Joan of Arc, Duguesclin, and Jeanne Hachette, and above them a kneeling statue of the Comte de Chambord, draped in a mantle. The general aspect is somewhat heavy, and the principal figure seems to lack grandeur and dignity of style in comparison with those which should be the subordinate figures. The design exhibited by M. Peynot, with whom M. Blavette, the architect, is associated in the design of the pedestal, would have more rightly found place in the architectural section. This plaster model, fine in its decorative effect, is a reduced representation, one-tenth the actual size, of the monument to the Republique proposed to be raised at Lyons. On the central line of the pedestal is the prow of a ship supported by Tritons, and which supports the figure of a woman seated. On the three sides are figures symbolising Liberty, Equality, and Fraternity. A circular pedestal adorned with trophies rises above, on which is the statue representing "La République," crowned with a Phrygian cap and holding an olive branch, an evident reminiscence of the statue in the Place de la République, but superior in design to the heavy figure by M. Morice.

M. Fossé has also represented the Republic, and provided her, moreover, with an urn and a lion, as well as the traditional olive, in his competition design for a monument to the Girondins to be erected at Bordeaux. The architectural portion is by M. Maubert. The figure stands on a pedestal with a figure at each angle and a "Fame" in alto-relief in the centre of the principal face. Another monumental work in alto-relief by M. Le Duc, intended for the town of Saint-Lo, is a design for a fountain to be erected to the memory of M. Harvin, former editor of the journal *Le Siècle*. This pretentious group is entitled "La Presse guide la Jeunesse à la Source de Vérité."

The group of the brothers Galignani, by M. Chapu, is intended for the town of Corbeil. The artist has done his best with a subject little suited for sculpture, and hampered with the vulgarities of modern costume. One of the brothers is seated, and holds a plan, the other stands leaning his hand on his brother's shoulder. The group gives the idea of figures in familiar conversation, and is very natural and perfectly free from posing or pretentiousness. Behind them a mantle is contrived to partially cover and connect the rigid lines of the chair, which piece of furniture is very well treated, being neither a classic nor a modern chair, but an idealised chair of a simple type, far better than the pretentious and contorted thrones on which Diderot, Lamartine, and others are seated in the statues which adorn the public places of Paris. The portrait resemblance of the figures is perfect.

M. Mercié, who made a remarkable success with his monument to King Louis Philippe, considering the difficulties of treating the subject sculpturally, has not been so successful with his portion of a monument for Constantinople. This is a figure of an aged man on a divan, probably intended for the Oriental monument by M. Paul Esquié, which was referred to by us in our article on "Architecture at the Salon." The head is fine, but the modern costume is so aggressive in every detail that the whole suggests the idea of a man sitting for his photograph. For a monumental work of this kind it is far better to keep to pure allegory than to attempt realistic portraiture, and the idea of M. Massoule, for a monument for the cemetery of Pervins,—a female figure kneeling before an antique tomb,—is certainly preferable to M. Mercié's realistic record of the deceased. It is difficult, perhaps, to achieve originality in designs of this kind, and the "Douleur" of M. Ingalbert, a heavily-draped figure in a long mourning veil, is a monumental idea which is not very new. M. Crank has produced a fine statue of the Archbishop of Cambrai; and another prelatical monument, that of the late Bishop of Limoges, is worth notice; the kneeling figure, designed by M. Marquet de Vasselot, is fine in its expression, and an excellent likeness, so that here, at any rate, a portrait monument may be said to have been successful as sculpture; but, of course, the episcopal robes are much more favourable for sculpture than many other forms of ceremonial dress. It was the bishop here commemorated who gave the funds for M. Vaudremer's church at Auteuil.

Among the official commissions in sculpture are a series of works executed for the City of Paris, which occupy a considerable space in the Exhibition, and it is one of the complaints to be made about the sculpture exhibition at the *Salon* that the same works keep coming up over and over again, first in plaster, then (after commission) re-appearing next year in marble, and perhaps another year in bronze. Accordingly, some of the prominent objects are works which we have already reviewed last year. Among the new official works are the "Chant" and "Musique," by M. Barrias, intended for the grand staircase of the Hôtel de Ville; these are two very fine works, which have deservedly attracted great attention, and of which we shall shortly publish illustrations. Another piece of musical sculpture, the seated portrait statue of Rameau, intended for the Académie Nationale de Musique, is a work sufficiently decorative in style, correct and frigid; a character equally belonging to the "Homer" of M. Delaplanche and the "Robert Sorbon" of M. Crank, both intended for the new Sorbonne, both well modelled, and both equally marked by the cold conventionality which seems in so many cases to characterise official sculpture. The group by M. Godebsky, however, with the remarkable subject, "La Force brutale étouffant le Génie," is an example of a State commission of a higher order; a fine group treated in the style of the eighteenth century. The best work among the commissioned sculpture is, no doubt, the group by M. Tony Noël, which is, after the completion of the Exhibition buildings, to stand on the lawn in the Champs de Mars, with M. Boisseau's "Défense du Foyer" as a pendant. The composition, — a model of which figured in the *Salon* of 1883, under the title "Uno avulso non deficit alter," now appears under the more simple and generally intelligible, though less pointed, title, "Pro patriâ morituri." The group represents a fallen warrior, from behind whom another steps forward energetically to take his place; the marble repetition has not, perhaps, all the vigour of the plaster model, but the group is unquestionably the master work in sculpture this year, and has every probability of obtaining the médaille d'honneur.

As the Municipality of Paris has in successive years purchased the "Porteuse de Pain," the "Gué," the "Rétour des Champs," and other "Peasantries" (as one may call them), a certain number of sculptors are going helter-skelter in the direction of modernism and realism, with the notion that the municipality furnishes a providentially-appointed mart for this kind of ware. Some of these works are vulgar and unsculpturesque in the extreme; the pleasing and natural group of "Frère et Sœur," by M. Albert Lefeuvre, is an exception, a figure of a young girl holding in her arms her infant brother; and we may also single out as above the average the little figure of a peasant woman by M. Gosselin under the title "Le Soir," and the "Maternité" of M. Cordonnier, a powerful work in which, however, the figure of the sleeping child is evidently inspired by that on a monumental design by M. Mercié exhibited last year.

Among the allegorical works of this year we are glad to notice Mr. Onslow Ford's charming figure of "Peace," which was in the Royal Academy of last year, and of which we published an illustration. Among other ideal works of the year is M. Falguière's "Nymphe Chasseresse," in marble (the plaster model was exhibited last year); a bronze, by M. Zacharie, "Le Roi Midas," showing great ability, though with too much leaning to caricature; "L'Esprit dominateur" of M. Captier, an allegory more pretentious than effective; "Le Drapeau," by M. Gardel, where a group of women and children kneeling is very prettily composed; the "Printemps" of M. Germain; the "Renommée," by M. Ingalbert, an alto-relief in bronze of very fine design; and there is a large decorative group of Tritons by M. Peynot, commissioned by the present owner of the celebrated Chateâu de Vaux, which is admirable in its way, and completely reproduces the style of the period adopted. Busts are numerous, as usual, but we cannot particularise them. Among smaller works we may call attention to the particularly fine collection of portrait medallions by M. Chaplain.

A review of the painting and sculpture of the year leads to the conclusion that French sculpture is not so much in advance of painting now as it was till recently. The new school of painters seem to have decided on their course, and are now making decisive progress, while the sculptors, on the contrary, seem rather more divided and less certain in their aims than previously, and there is a considerable proportion of work which appears decidedly tentative and experimental. On the whole, the *Salon* of 1888 shows more progress and life in painting than in sculpture.

The Artists' Benevolent Fund. — It is announced that the seventy-ninth annual dinner of this Fund will be held at the Freemasons' Tavern on Wednesday, June 20, the Earl of Derby, President, in the chair.

NOTES.

IN the *Times* of Thursday is published a letter addressed by the Institute of Architects to the First Commissioner of Works urging a reconsideration of the decision recently arrived at in regard to what is now called the "Admiralty Buildings Extension Scheme." The Council of the Institute lay the principal stress of their objection on the bad architectural character and known faulty construction of the old Admiralty buildings, which it is now proposed to retain as the centre or architectural keynote of the new buildings :—

"If, from motives of economy, it be deemed desirable to retain the present Admiralty for as long as it will stand, it would yet be, in the opinion of the Council, most inexpedient to erect an important public building as a replica of a confessedly old and decaying structure, with a faulty foundation, inadequate in respect of height of stories, and possessing but slight architectural merit. Rather should the new building be designed with due regard to internal convenience and to architectural propriety, such as would befit the home of a great Department of State, in anticipation of the present Admiralty,—when the time arrives for its inevitable demolition,—being rebuilt as the completion of an edifice which might be worthy of its important public character.

In the interest, therefore, of the public, as well as of architecture, the Council of the Royal Institute of British Architects respectfully record their protest against the adoption of this scheme now submitted to Parliament, on the grounds that it would involve the perpetuating of evils inherent to an old and perishing structure, having a short and precarious tenure of life; that the application of public money for such a purpose would be unwise and unjustifiable; and that the anxiously-looked-for opportunity for the erection of a stately and convenient public office which might be a credit to the nation would be irretrievably lost."

We fully concur with the Institute, though our opinion is that they may as well preach to the winds as to our Legislature or any of its officials about public architecture, a subject which it is now the recognised political fashion to regard from no standpoint but that of financial economy. The Institute letter is followed by two other characteristic epistles, one from Earl Wemyss, urging that a model should be made of the buildings; and saying that he had urged the making of a model of the previous design, the effect of which was to show that the design was out of all character with the site and surroundings; that no wise man builds without a model, &c. Now in fact the only thing the former model really did was that it showed some people, who could not believe it otherwise, how narrow, deep, and funnel-like some of the internal courts were. Wise men (architecturally wise) do not as a fact require models of the kind Earl Wemyss suggests; they are expedients to convince people who cannot understand drawings. Then the irrepressible Mr. Cavendish-Bentinck follows, whose cue it is to differ from every one, and who upholds the old Admiralty buildings because the Institute speaks lightly of them, and avers that the Institute have no business to lecture the House of Commons on architecture, because they did not interfere to prevent St. Paul's reredos being erected. This is impertinent nonsense. Mr. Cavendish-Bentinck ought to know perfectly well that the whole design and procedure in regard to the St. Paul's reredos was purposely kept a secret, and no one allowed to know what was being done. But it is natural that Mr. Cavendish-Bentinck should feel jealous of any man, or body of men, who seem disposed to interfere with him in his self-appointed office of lecturer on taste to the House of Commons.

NONE of the questions of the present time is more deserving of general attention than the present condition of canal communication in the country, which has recently been discussed by the Society of Arts. The papers read and the discussions upon them embrace all points of view in which the subject can be regarded, from the history of canals in general to the present condition of most of the canals in this country and some of those on the Continent and in America. It is a subject on which much has been already said in our columns from time to time, and which we may

find occasion to return to in reference to the discussion at the Society of Arts.

IT does not appear to us that either master-builders or workmen are showing much logic or sense of fairness in their respective attitudes towards the Government Bill for the Amendment of the Employers' Liability Act. The Institute of Builders and a number of Master Builders' Associations are petitioning against the amendment of the Act, from which we presume we may conclude that they regard the Bill as an unjust and oppressive measure, or that they wish to persuade others so to regard it. We do not think they have much chance of succeeding. The impression of most impartial readers of the Bill,—meaning by "impartial" those whose interests are not in any way affected by it,—will probably be that the Amendment Bill is still a very mild and moderate measure as far as the masters are concerned; that the limit of compensation fixed, three years' earnings, or in any case not more than 150*l.*, certainly errs on the side of being too low rather than too high; and that section 3, while requiring that a workman shall not have power to contract himself out of the Act without the prospect of an adequate compensation in the way of insurance, is hardly likely to operate so effectually in inducing a care on the part of the employer for the safety of the workman, as the prospect of a direct claim for compensation on behalf of the injured man. The insurance system saves trouble, no doubt; but it also tends to reduce the consideration of injuries to a mere question of financing on the part of the employer, and to the avoidance of publicity in the case of accidents in which the employer or his agent was morally to blame. On the whole we feel considerable sympathy with the view taken in Mr. Burt's alternative Amendment Bill, in favour of rendering void all contracts out of the provisions of the Act. Mr. Burt's limit of 500*l.* for compensation is rather high, though, of course, it is only a permissive limit, and the discretion of a jury would probably reduce it in actual practice to a fair limit. The want of logic and reasonableness in Mr. Burt's proposal comes in at the provision for making the employer liable for the negligence of "any person" in his service,—in other words, the entire abrogation of the theory of "common employment." So that if any man, through gross and culpable carelessness, drops something on the head of and kills or injures a fellow-workman, the unfortunate employer is to be liable for an injury which has nothing whatever to do with the conduct of the work, either by himself or by his agents or overseers. We are not entitled to speak as to the legal aspect of this view, but as to its moral and common-sense aspect we have no hesitation in saying that it is preposterous, and that we do not believe any Government will ever look at it. Such a provision would simply be setting up a paternal legislation for the protection of workmen from the consequences of their own carelessness. It is a great pity that the Parliamentary champions of the working man have not more sense of reason and logic. Some portions of the proposed Amended Bill, backed by Mr. Burt and his colleagues, really deserve consideration, but they are likely to seriously prejudice their own cause by the unreasonable nature of some of the demands which they are ready to make on behalf of the supposed interests of the working-man. We may mention that the text of both Bills was printed in the *Builder* for April 21.

AT a meeting of the National Health Society held at Grosvenor House on Monday, for the purpose of distributing certificates to successful candidates in the ambulance and nursing classes, the Duke of Westminster expressed his willingness to place at the disposal of the Society a site in Buckingham Palace-road, which would be available for the purpose of a model sanitary building. From the brief report of the proceedings, we do not gather whether this is proposed to be a temporary illustration, like the house built at the Health Exhibition, or a permanent building; but if the latter, we should feel considerable doubt whether the public benefit to be derived from such a building would be proportionate to the value of the site and the cost of building. A temporary building, showing in a practical form the conclusions arrived at by the best sanitary scientists at the moment, is of interest, and may be of value in an educational point of view. But the tendency of a permanent illustrative building would probably be to stereotype certain theories and methods of construction as the best, which further knowledge and experience might probably modify very much, or even supersede entirely. Sanitary science, being in a great degree the result of the teaching of daily experience, and subject also to the influence of new discoveries and inventions in the chemistry and machinery of sanitation, ought to be in a constantly progressive state, and it would be illogical to lay hold of any special theory and mechanism, and say "this is the right thing for generations to come," and erect a building to form a permanent model. The effect of that, if it had any effect at all, would surely rather be to check progress and to put the public in the hands of *doctrinaires*, which is exactly what should be avoided in regard to sanitation.

ONE of the most picturesque views of Christchurch Priory Church is from the north-west. The river Avon is seen as a foreground, there being a small mass of ivy-covered ruins making a pretty "bit" of scenery in conjunction with the flowing river and the fabric of the ancient church, the castle mound being close at hand to the right. The ruin is that of a Norman house in fair preservation, although the cut stone which apparently faced it has been long since removed. There are several double windows which once lit the principal room on the first story. These are semicircular-headed lights, enclosed within a hood moulding. There is also a capital circular chimney-shaft of the same early date. There were two rooms on the ground-floor, and a single hall on the upper story, the approach being by a stone staircase. The walls, and those of a small projecting tower, under which the castle moat apparently ran, are of great thickness. We have said enough to indicate the great amount of interest there is attaching to this ancient ruin, and, as we all know, Norman houses, and fragments even of them, are not readily to be met with. We can scarcely believe a statement which has been deliberately made by the *Hants Independent*, "on good authority, though it seems incredible, that the Town Council of Christchurch have resolved to pull down the remains" of the building we have described. The permission of Lord Malmesbury and Sir George Meyrick, we are told, has been obtained, and there may be nothing which prevents this act of vandalism from being carried out forthwith. The object for the removal is to open out the view of the Minster! There is, we sincerely hope, some error in our contemporary's information, for it seems hardly possible that any men can be likely to commit an act so grievous and so wanton. It is, however, highly necessary that the truth of the statements made should be investigated, and at once.

SIR HENRY LAYARD'S protest against replacing the collection of National Portraits in a shed at South Kensington is well timed. But it seems hopeless to expect that the Government will erect a new building in a central situation. We confess that, having regard to the fact that the National Gallery is at Trafalgar-square, and that there are exhibitions of pictures all over the West End, we should prefer to see the collection of National Portraits remain in the East End till a fitting central home can be built for it. Those who are interested in the collection can easily find their way to Bethnal Green: why, too, should the toiling East be always expected to come to the leisured West?

LORD OXENBRIDGE has decided to sell his Gatton estates, in the neighbourhood of Reigate. The auction will be held at the Mart on July 4th. In the various lots are included Gatton Hall, the late Lord Monson's seat, a fine mansion in the Italian style, with grounds laid out by "Capability" Brown, and the famous park of 350 acres; Nutwood Lodge and grounds (35 acres); Whitehall Farm; Battle-bridge Farm (185 acres), so-named from a traditionary defeat of the Danes; Gatton Cottage and Tower; and the beautifully-situated Upper Gatton Park, on the hill by Chipstead. Gatton Park, or Lower Gatton House, which once carried with it the entire property in the vote of the borough, was sold to Mr. William Petrie for 110,000*l.*, and afterwards bought by Colonel Sir Mark Wood, Bart. Gatton had been a very populous place, sending members to Parliament ever since the days of Henry VI. In later times the two members were returned, by the constable, by from seven to twelve electors. The borough was disfranchised on the passing of the Reform Bill in 1832, having become one of the most notorious of our "rotten boroughs." The old Town-hall, the scene of the elections, together with the advowson to Gatton rectory, will be offered for sale at the same time. The parish covers nearly 300 acres, and stands under the chalk hills, two miles north-east from Reigate. Pilgrim's-lane is called from its having formed the route from London to St. Thomas à Beckett's shrine at Canterbury.

MR. A. T. WALMISLEY, C.E., has been appointed engineer to the Dover Harbour Board, to fill the place of Mr. A. L. Newdigate, deceased. The duties involve residence in Dover, but Mr. Walmisley will continue to carry on his practice at Westminster. The chief work at present in hand is the widening of the dock gates to the Wellington Basin, for which Messrs. Lucas & Aird are the contractors

A NEW pulpit has been placed in the Moray Aisle at St. Giles's Cathedral, Edinburgh, where the daily service is held. It has been presented by an anonymous donor "to commemorate the resumption of daily service in this church after an interval of two hundred years." The pulpit is of oak, left in the natural state, hexagonal in form, having in each panel carved tracery and the figure of an angel bearing a shield; it is surmounted by an open canopy in three stages, 20 ft. high, with carved crocketed pinnacles and flying buttresses. The pulpit is placed to the left, against the transept pillar; it forms a marked contrast to the surroundings, owing to the lightness both of form and detail as compared with the robustness of the older work. Dr. Rowand Anderson was the architect.

THE historical Shaw House, near to Newbury, is to be sold by auction on Tuesday next. The house was built, in 1581, by one Thomas Dolman, of Newbury, cloth-worker. It consists of a central portion, capped with three gables, and has two deep wings. The queens Elizabeth and Anne are said to have visited this house, which, however, is chiefly interesting for its attack by the Parliamentarian forces, under Edward, second Earl of Manchester, in 1644. Lieutenant-Colonel Page held it for the king; with the help of Colonel Thelwall and Sir John Brown he signally repulsed the enemy on the morning of Sunday, October 27. Charles I. was in the house at the time. In a panel by the drawing-room east bay window is shown a fracture reputed to have been made by a ball aimed at the king when he was dressing. An inscription recorded his escape, "hanc juxta fenestram rex Carolvs primvs instante obsidione scopvlo petræ icto tantvm non trajectvs fvit die Octob. xxij, mdcxliv." A pile was preserved of a large number of cannon-balls that were found about the gardens. The entire property, together with the mill, village club-house, manors, advowson, &c., extends over 1,633 acres; but one separate lot can be taken of the mansion and grounds, covering rather more than 231 acres. The village lies on the northern bank of the river Lambourne, a tributary of the Kennet, which separates it from Newbury. The first battle of Newbury, wherein Falkland fell, was fought at Wash Common, by the southern outskirts of the town, on September 9, 1643.

WE hear that Mr, C. E. Barry, the son of Mr. Charles Barry, the well-known architect, has left England for Washington, intending to commence practice there as an architect. As the grandson of Sir Charles Barry, the architect of the Houses of Parliament, Mr. Barry inherits a name very distinguished in English architecture, and we hope he may be fortunate enough to render it distinguished in the United States also.

THERE appears to be the old style of thing going on in regard to the competition for new baths and washhouses for St. George's, Hanover-square, about which a competitor addressed a letter to us last week. The committee appear to have appointed a professional assessor, but have not accepted his choice, nor published his report, and as our correspondent said, they promised to exhibit all the designs publicly, but did not exhibit their selected one, and in fact did not in a real sense "exhibit" them at all. Then there is a rumour that the author of the design selected gave a dinner to the members of the Committee a week before the selection; which may or may not be true: on the other hand, persons who are interested in other designs seem to be getting annonymous articles on the competition into journals, by way of furnishing "unbiassed criticism." In most of these cases it is six of one and half a dozen of the other; and the proceedings of the candidate who gets himself selected, and of those who try (of course "on public grounds" only) to upset him, are generally about equally dignified and disinterested.

"AN Architect," writing to the *Times* a few days ago, comments caustically and not unreasonably on the mismanagement in the planning of the latest addition to the Royal Academy Galleries, whereby the water-colour room is full of the odour of the kitchen and lunching-rooms. Even, he says, "when real Turners were there, the smell of cooking was almost intolerable; and when the water-colours are only those of Turner's humbler successors, it is not surprising that visitors avoid the room." The interior arrangements at Burlington House, as carried out from time to time under the supervision of R.A. architects, are certainly not creditable to the notions of practical planning existing among the architectural members of that body. It might have been thought that it would have occurred to an Academical Architect that a staircase leading direct from the kitchen door to the picture gallery would be a conduit of kitchen odours, unless some special extracting power in another direction were provided. This arrangement is only on a par with the Arcadian simplicity with which the retiring-rooms for ladies and gentlemen are arranged to open in the most conspicuous manner from the vestibule on either side of the entrance-door, and in full view of each other. It would probably be difficult to find a parallel to this in any other recent public building of anything like the same importance.

ARCHITECTURE AT THE ROYAL ACADEMY.—V.

1812, "The Arch of Caracalla at Tebessa, Algeria"; Mr. Alexander Graham. A sepia drawing, with a blue tinted sky, of the remains of the Roman arch as existing. The arch seems to be an angle erection facing two ways, each arch flanked by a projecting square mass of entablature carried on two Corinthian columns. A small portion of an attic with dwarf columns remains. The character of the masonry is very carefully shown, but the whole effect is rather unreal, owing to the use of blue colour in the sky over what is otherwise a monochrome drawing. Let a drawing be monochrome, that is, a shaded drawing merely, or fully coloured, but not a mixture of the two. The ruin is a fine and interesting one, and well worth illustration. It would be worth while for the author to follow it up with a restoration in next year's exhibition.

1813, "New Buildings, Haileybury College"; Mr. Reginald T. Blomfield. An effective sketchy drawing in brown ink on a light brown paper; sky and lights on the building touched in with white; an oblong block of building, Gothic in feeling, but Renaissance in detail, buttresses with scroll set-offs and cannon-ball finials. It is an effective bit of building, but there is nothing to show what it means or what is its purpose.

1814, "Four central panels of Majolica frieze at the Ospedale del Appo, Pistoija, by Giovanni della Robbia"; Mr. Brightwen Binyon. This is an illustrative water-colour drawing of a coloured frieze of della Robbia ware, in four sections, "Nursing the Sick," "Visiting the Saints in Prison," "Burying the Dead," and "Feeding the Hungry." The two outer subjects are on a white ground, the central ones on a blue ground. The subjects are divided by double pilasters with floral ornament, enclosing a figure of a saint between. From the point of view of the present day the treatment of the subjects is childlike in its naïveté; but it is an interesting example of a special form of art, and the author of the drawing deserves thanks for his careful delineation.

1815, "Brasenosé College, Oxford; New Front to High-street"; Mr. T. G. Jackson. Essentially a collegiate building; following old University traditions, there is an entrance gateway with the arms of the college carved over it and a short square tower rising above, with battlements and a square angle turret. The design is in a late Gothic style, with a row of gables towards the street on either side of the tower; the lower and upper ranges of windows are small and square-headed, the middle range shows larger windows corbelled out as oriels. If, as may be supposed, the building consists of ranges of living-rooms, it is not easy to see the architectural justification for this richer and more important treatment of the middle story. There appears, as far as can be made out on the drawing, to be a certain novelty of treatment in the carved openwork parapets of the oriels. A comparison of this with other collegiate buildings by the same architect seems to indicate that Mr. Jackson has no settled principle as to style and treatment, and reproduces Collegiate Jacobean or Collegiate Gothic as occasion demands. This architectural position is open to defence, of course, in accordance with one theory of architecture, but it does not commend itself to us. Let the additions exhibit the age in which they are built, would be our theory, and it was the theory of the old Oxford builders, who did not hesitate to engraft Classic architecture, when that was the style of their day, on Gothic; otherwise where would have been the Jacobean Collegiate architecture which in other moods Mr. Jackson reproduces so faithfully?

1816, "Parish Church, St. Mary, Hornsey"; Mr. Jas. Brooks. This is the drawing illustrated in the *Builder* for May 12, and on which we made some comments at the time.

1817, "Church of St. John, Stanstead Mountfitchet"; Mr. W. D. Caröe. This is a very solid-looking church in late Gothic style. The treatment of the tower shows character; it is a large square low tower, almost separated from the church, and treated with considerable richness of pinnacles and panelling at the upper stage. There seems to be some kind of double spirelet growing out of the centre between the parapets, one of stone and the other slated, but the drawing is too high to follow out easily in detail. The windows are all kept high, leaving a mass of untouched wall at the base, with good effect architecturally, but looking as if the interior light would be religiously dim. A plan is added.

1819, "Proposed House at Harrow"; Mr. Arnold B. Mitchell. A charming brown drawing, of which we published a reproduction in the *Builder* for May 26; it is a kind of house that seems made for a picture, but at the same time it must be said that it is far too much like a bit of old domestic architecture rather than a modern house; and it is treated in the drawing so as to appear even more emphatically ancient. We connect our notions of the picturesque so much with age, that it is comparatively easy to achieve the picturesque by putting on the appearance of age in a drawing: the problem (a far more difficult one) is to make a house frankly modern and yet picturesque. No plan of the house is shown with the drawing at the Academy, but we gave one with our illustration a fortnight ago. The design is very successful as a picture, but as we understand that it is likely to be considerably modified in execution, we would offer one criticism as to the plan, viz., that it will be advisable to avoid the immediate propinquity of the larder to the dustbin. Dustbins are much-abused receptacles of organic and other matter which should never be put into them; and even although efficient means may be taken to make the floor and walls of the bin, and those of the larder, impervious, the mere idea of the juxtaposition referred to is not a pleasant one.

1820, "The Temple at Dougga, Tunisia"; Mr. Alexander Graham. A drawing of the same class as No. 1812, showing the high narrow portico of a Roman temple of four columns width only, with the pediment and cornice nearly complete. The return of two intercolumniations with the architrave and anta is nearly complete at one side, the remains of the other end (the intermediate portions being gone) show an apse with its arch, and the courses of large bonding stones at intervals, all probably once covered up with cement. The drawing is one of great interest, and this also suggests the propriety of a restoration, a sequel which would occur as a matter of course to a French architect, but in England we are content with sketching the actual state of antique remains without troubling too much about the realisation of their former condition.

1821, "31, Egerton-gardens: view of hall and first-floor landing"; Mr. T. H. Smith. This is an excellent bit of pen-drawing, and the staircase looks light, spacious, and well-planned; but the details exhibit nothing original, being the ordinary stock-in-trade of panelled wooden pilasters and brackets and segmental arches springing from them; the whole wants individuality of character.

1822, "The Chapel, Stonyhurst: Interior"; Messrs. Dunn, Hansom, & Dunn. A rather too hastily-drawn pen interior, of which we published a reproduction in the *Builder* for last week; in saying it is hastily-drawn we mean that the lines are not clear, and there is too much scratchy shading for our idea of architectural pen-drawing, though the general effect is sufficiently given by this means. The treatment of the roof is peculiar; the open-timber collar-beam roof (a low collar, nearly taking the place of a tie-beam) is footed on a cornice oversailing into the church, and apparently supported by a series of fan groins springing from wall shafts between the windows, and abutting against a *plafond* between the cornice and the wall line. If these are stone (which is hardly possible, unless they are tied in some concealed manner), they are a false introduction of the fan-groin form, with no obvious counterfort; if they are of wood, as we presume, they are false in another manner,—a timber imitation of a stone construction. It cannot be denied that the whole result is rich and effective, or would be to any one ignorant of construction and of the history of the vaulted roof; but it is an effect which is, strictly speaking, an architectural sham.

1823, "Chastleton Hall, Warwickshire"; Mr. E. G. Dawber. A very charming water-colour drawing of a castellated mansion, with a belt of dark foliage in the rear, the rich dark hues of which are admirably given in the drawing, while equal attention is paid to the detail of the building, and the tone and texture of the masonry. The merit of this drawing (a rather rare merit in the R.A. Architectural Room) is that while truthful and precise as an architectural drawing, it exhibits really artistic feeling for colour.

1826, "The Nave, Notre Dame, Chalons-sur-Marne," and, 1827, "The Western Front, Wells Cathedral"; Mr. Arnold B. Mitchell. The former is an effective sketch of the solid Early Gothic interior, the latter a large shaded drawing of the front of Wells, of which we published a reproduction in the *Builder* for March 24 last. As in the case of a previously mentioned drawing by the same artist, the view is practically an elevation, as far as general effect is concerned, all adjuncts being ignored and the whole treated as a flat view of the front from a point opposite the centre, perspective being only recognised so far as the raising of the horizontal lines of the projections. This is not a bad way to combine strictly architectural representation with a certain amount of pictorial effect; still it has a somewhat conventional and unreal appearance; and the device of leaving out nearly all the detail on one side, employed also in Mr. Mitchell's drawing of Rouen (1799), though it no doubt gives a look of dash and effectiveness, is rather apt to give the impression of

being tricky if a draughtsman constantly has recourse to it. In this drawing of Wells the whole of the upper part of the southern tower is a nearly white textureless expanse, the main features merely indicated, standing against a dark, threatening-looking sky. This is "Turneresque," no doubt, but we doubt if the actual towers of Wells ever presented, under any light, this kind of contrast to the eye of the discreet spectator. However, the drawing is a highly effective and original one, and the portions that are finished show the detail clearly, though with rather a want of solidity and richness, in this respect again differing from the real impression produced by this wonderfully rich façade.

THE ANNUAL REPORT OF THE METROPOLITAN BOARD OF WORKS.

THE Annual Report of the Metropolitan Board of Works for the year 1887 has just been issued. In consequence of recent events, and the threatened extinction of the Board by the Local Government Bill, the report is likely to be looked at with much interest, although, as it is dated "Spring Gardens, 31st December, 1887," it necessarily makes no mention of recent occurrences affecting the position of the Board. The report, with its appendices, contains upwards of 200 pages of printed matter, much of it of a statistical character, undoubtedly requiring time and care in collating; but, as we have complained on former occasions, we fail to see why a document of so much importance and interest to Londoners should be issued five months later than the date it bears.

Though we have from time to time felt bound to criticise the Board's proceedings in some respects, we have recognised that its faults are largely due to its inherently-defective constitution. Its members are not directly elected by the ratepayers, but are the nominees of the various vestries or district boards of works. They hold their seats for three years, and the consequence is that they are not easily amenable to the healthy influence of public opinion. But while we have been among the critics of the Board, we have never been unmindful of the fact that it has been the only substitute for municipal government that London as a whole has hitherto had. What London, with its 120 square miles of area might have been now in regard to municipal government if its historic corporation had been public-spirited enough in the past to extend its sway beyond the one square mile locally known as the "City of London," we will not venture to say; whatever motives may have actuated the "City Fathers," they lost a grand opportunity. But Nemesis threatens to overtake them, for if Mr. Ritchie's Local Government Bill becomes law, the new County Council for London will really be a Municipal Council for the whole of London. It will not only take over the work of the Metropolitan Board of Works, but also a great deal of the municipal work of the Corporation, and what is now known as the City will be shorn of much of its *prestige*, and will become little more than a quarter-sessions borough.

Taking into account the Metropolitan Board's defective constitution and its limited number of members (they number barely sixty), we are of opinion that the Board has done its work, on the whole, as well as could have been expected under the circumstances during the thirty-two years of its existence. Primarily intended to carry out a system of main sewerage for London, its duties have been continuously added to from time to time. As the only substitute for a metropolitan municipality, it has been from time to time saddled with the responsibility of administering Acts of Parliament innumerable, dealing with all kinds of subjects, from the regulation of "baby-farms" to the stamping out of the cattle-plague. But without further preface we will glance at some of the principal items of the work of the Board during 1887, as summarised in the Report.

Under the head of "Sewerage and Drainage," an account is given of the progress of large new sewers intended to supplement some of the sewers of the main drainage system,—a system which, on account of the largely-increased area built upon since it was devised, has of late years been found to be inadequate to carry off the enormous volume of storm-water which rapidly finds its way into it, from roof, roadway, and yard, at times of heavy rain. Among these new works are the Holloway and Northern High Level Relief Sewer, costing about 80,000*l.*, and virtually completed last summer; and a new pumping-station in the Isle of Dogs, costing about 21,000*l.*, including engines and machinery. With regard to local sewerage and drainage works carried out by the vestries and district boards, plans of which have to be submitted to the Metropolitan Board of Works for approval, sanction was given during the year for about fourteen miles of sewers, varying in size from 5 ft. by 3 ft. in brickwork) to a 9 in. stoneware pipe. In addition, about 400 branch sewers were during the year connected with the main sewers, under the superintendence of the Board's officers. The Report informs us that the cleansing of the main and intercepting sewers (in all about 250 miles in length) is done by a special staff of men employed by the Board for the purpose. The number of men employed is 124, of whom eighteen are foremen or gangers, and the cost of the work during the year was about 15,500*l.*

"The Sewage and the River Thames" is the title of the next section of the Report, and it recounts the vicissitudes of the Board's action with regard to what, as they truly say, is the most important, probably, of the many subjects which have occupied their attention during the last few years. We have from time to time described and criticised the Board's proposals with regard to this subject,—proposals which, we venture to re-assert, will, if persisted in, entail much further trouble and outlay upon them or their successors. Last year* we described the works now being carried out at the Barking Outfall for deodorising and precipitating the sewage before discharging it into the Thames. These works will probably cost considerably more than half a million of money before they are completed. Our doubts as to their efficacy in attaining the desired end, viz., the sweetening of the river, are shared by many eminent engineers, including Sir Robert Rawlinson, whose opinion, given in the *Times* the other day, was quoted in last week's *Builder*.† In spite of such criticism, however, the Board only two or three weeks ago‡ accepted a tender amounting to 259,816*l.* for similar works at the Southern Outfall Sewerage Works at Crossness, so that the two schemes involve an expenditure of at least three-quarters of a million sterling. The Board and their Engineer seem prone to indulge in optimistic views as to the anticipated success of these works, which the Engineer in his report to the Board, describes in detail. We wish we could feel assured of their efficacy. How serious the evil of the sewage in the river was becoming may be judged from one passage in the Board's report, which says that during the long-continued hot and dry weather of last summer it was found necessary (as in the previous year) to deodorise the sewage at the two main outfalls before allowing it to pass into the river. The Board, "thinking it desirable" (in other words, becoming alarmed), obtained the opinion of Sir Henry Roscoe, and acting upon his advice used 2,211 tons of chloride of lime, 2,173 tons of manganate of soda, and 865 tons of sulphuric acid, at a total cost of 42,467*l.* 12s. 1d. With regard to the experimental operations at Crossness, the engineer states that during the year the total quantity of sewage treated equalled about 2,005,000,000 gallons. The wet sludge obtained therefrom amounted to 62,000 tons, which, on further settlement in the subsiding-tanks, was reduced to 41,000 tons. Of this quantity, says Sir Joseph Bazalgette in his report, 39,556 tons were pressed into 14,401 tons of sewage sludge cake, the remaining 1,444 tons being subjected to experiment in various ways. About 10,985 tons of sewage sludge cake have been delivered, free of charge, into railway trucks or barges, for consignment to farmers and others who have applied for it for "agricultural experimental purposes," but with what result we are not told.

To pass to other sections of the Report, particulars are given of the operations of the Board for the prevention of river floods within the metropolitan area. The Board is empowered by statute to require the wharf walls and river-banks to be raised so as to prevent the overflow of the river. The part of the Report relating to "Metropolitan Improvements" details the Board's proceedings with regard to such new thoroughfares as Charing-Cross-road, Shaftesbury-avenue, Marshalsea-road, Southwark (for so is named the new street, opened a few days ago, from Southwark Bridge-road to High-street, Borough, opposite Great Dover-street, and which, in its course, has cleared away a great many of the rookeries of "the Mint"), and the widening of Gray's Inn-road, Upper-street (Islington), Green-street (Bethnal Green), Church-place (Hampstead), Walworth-road, and other improvements too numerous to mention here, and most of which are now completed. The most important work of this kind now in hand is the construction of the new street from Gray's Inn-road to St. John-street-road, which will provide a much-needed improvement for the large traffic passing between Holborn and Islington. This is an improvement which we have long advocated. The new street, starting from the junction of Gray's Inn-road with Clerkenwell-road, opposite the Holborn Town-hall, will run in a north-easterly direction, and debouch into Farringdon-road at a point just above what used to be Coldbath-square, opposite the corner of the prison. For a distance of 120 yards, the new street will be carried on a viaduct, crossing Great Warner-street with a headway of 18 ft., and thus will avoid the steep, tortuous, and dangerous declivities of Elm-street and Mount Pleasant. Crossing the Farringdon-road, the new thoroughfare will subsequently cut across Tysoe-street and Garnault-place, Clerkenwell, and, passing the "New River Head," will terminate in St. John-street-road, near Sadler's Wells Theatre. This scheme involves the displacement of 3,416 persons belonging to the labouring classes, and as the Board is subjected by statute to severe restrictions with respect to the removal of the habitations of working people, it will take time to complete the improvement. The Board is prohibited, under a penalty of 500*l.* for each house, from purchasing twenty or more houses until it has obtained the sanction of the Home Secretary to a scheme for the rehousing of the persons displaced. This was a very difficult problem to solve in so thickly-populated a district. However, as a beginning, by arrangement with the Home Office, two sites between Gray's Inn-road and Farringdon-road were cleared and leased to the Artisans', Labourers', and General Dwellings Company for a term of 999 years, and upon these sites dwellings to accommodate at least 850 persons are now being erected. When these dwellings are completed the Board will be enabled to proceed with further clearances.

Another section of the Report deals with the operations of the Board under the Artisans and Labourers' Dwellings Improvement Acts, with the object of remedying the evils arising from overcrowding. Several schemes under the Acts are now in progress, and it is stated, as a general result of the work accomplished, that the blocks of buildings already erected in the metropolis upon ground cleared by the Board under the Artisans' Dwellings Acts are 244 in number, providing dwelling accommodation for 25,953 persons,—not a bad record, taking into account the delays which arose from time to time owing to the necessity of amending and modifying the original Act before it could be made a workable measure under the circumstances of the case.

The Report recounts the operations of the Board in regard to the metropolitan bridges. The superstructure of Hammersmith Bridge has been rebuilt, at a cost of 82,177*l.*, and the bridge was re-opened last year. A very ugly affair the Board have made of it, a tawdry iron sham, absurdly imitative of masonry, in marked contrast with the fine and solid granite bridge at Putney. Battersea Bridge is being re-erected; it will have arches of cast-iron resting upon piers of granite, and the width between parapets will be 40 ft. It will have five arches, that in the centre having a span of 163 ft., the two on either side of it spans of 140 ft., and the abutment arches spans of 113 ft. 6 in. each. The amount of the contract for the bridge is 143,000*l.* The Albert Bridge at Battersea, and Lambeth Bridge, have been, or are being, strengthened; we should like to see the last-named erection replaced by something more worthy of its proximity to the Houses of Parliament.

"Parks, Commons, and Open Spaces" form the heading to another section of the Report. During last year a considerable addition to the area of the parks and open spaces under the Board's control has been made by the transference to them of Victoria, Battersea, and

* See *Builder*, December 17th, 1887, p. 838.
† See "Notes," p. 373, *ante*.
‡ See *Builder* for May 12th, p. 342, *ante*.

Kennington Parks, and Wandsworth Common. The aggregate area of parks, commons, and open spaces under the management of the Board is now upwards of 2,600 acres. Arrangements are in progress for considerable additions to this total.

The Fire Brigade; the increase of the constant supply of water; the control of dairies, cowsheds, slaughter-houses, and offensive businesses; the supervision of the manufacture, conveyance, and storage of explosive materials; the supervision of streets and buildings under the Metropolis Local Management Act and the Metropolitan Building Acts; and the Board's jurisdiction over theatres and music-halls, are subjects all dealt with at length in the Report, which has four appendices. The first of these contains a synopsis of the very numerous Acts of Parliament conferring powers on the Board; the second consists of the Report of the Engineer (Sir Joseph Bazalgette); the third appendix is the Report of the Superintending Architect (Mr. Thomas Blashill); while appendix No. 4 deals with finance. That this involves large figures will be seen when it is mentioned that the Board's expenditure during the year 1887, including 692,676*l.* advanced on loan to other local authorities, 696,825*l.* invested in Treasury Bills, and 128,867*l.* applied to repayment of temporary loans and reductions of debt, has amounted to 3,678,445*l.*, of which 757,478*l.* has been defrayed out of money raised by the issue of Metropolitan Consolidated Stock. Altogether, the Report is an interesting record of important work done or in contemplation.

ROYAL INSTITUTE OF BRITISH ARCHITECTS:

RECENT LEGAL DECISIONS AFFECTING ARCHITECTS.

THE eleventh ordinary meeting of this Institute for the present session took place on Monday evening last, Mr. Arthur Cates, Vice-President, in the chair.

Mr. F. Meadows White, Q.C., Hon. Associate, read a paper entitled "The most Recent Legal Decisions affecting Architects." Mr. White referred to the limited scope of the subject he intended to deal with, due to the paucity of what might be properly regarded as *recent* legal decisions affecting architects. He then at considerable length discussed and explained the points involved in the following cases bearing on his subject:—Scott *v.* The Great and Little Clifton School Board (1884) 14 Q.B.D. 500, Cababé and Ellis, Nisi Prius Reports 435 (Appointment of architect); Emden *v.* Carte, 17 Ch. D. 169; on appeal *ib.* 768 (Effect of bankruptcy of architect on right to recover for plans, &c.); Botterill *v.* Ware Bd. of Guardians, 2 *Times* L.R. 621, read with Coleman *v.* Gittens, 1 *Times* L.R. 8 (1884), (Architect's Certificate); Lapthorne *v.* St. Aubyn, 1 *Times* L.R. 279 (1885), following Laidlaw *v.* Hastings Pier Company (see Jenkins and Raymond's Architect's Legal Handbook, Appx. p. 238); Richards *v.* May, 10 Q.B.D. 400; Locke *v.* Morter, 2 *Times* L.R. 121 (1885), (Claim against builder for measurement of extras); Brunsden *v.* Beresford (1883), Cababé and Ellis, N P. 272, (Architect's Certificate); Brunsden *v.* Staines Local Board (1884), Cababé and Ellis, N.P., (Building contract and effect of certificate); Gwyther *v.* Gordon, 3 *Times* L.R. 461 (1886), (As to necessity of stamp in an architect's contract); Priestley *v.* Gurney, *coram* Stephen J., January, 1888 (Relations of building owner, builder, architect, and quantity surveyor*). Many of these cases will be found reported and commented upon in past volumes of the *Builder*. Mr. Meadows White's paper does not admit of abridgment, and will be published in due course in the "Transactions" of the Institute.

In the discussion which followed, the Chairman said it was a matter of great regret that the Dinner of the Surveyors' Institution, which took place that evening, had prevented the presence of many gentlemen who would otherwise have taken part in the discussion on a paper which was of the greatest interest to the whole of the profession. It was, in fact, a generous act on the part of Mr. Meadows White to hold out to them warnings and beacons against the shifting sands and rocks on which they might be wrecked, for, as he had well put it, the legal profession prospered by the errors of others. No doubt the discussion would be an active one, and would fully enter upon most of the points that had been raised. With regard to the case of Priestley & Gurney *v.* Stone, it was one of great importance, because the whole question at issue, whether the quantity surveyor was responsible to the builder for the accuracy of his quantities, was one that vitally affected the interests of the builder, the employer, and the quantity surveyor. It had always been held and believed that the quantity surveyor was responsible, and it had been always held by the Institute that those who took out quantities, and covered themselves by exceptions, did that which was not desirable. The judgment, if maintained, was an exceedingly important one, and they might therefore all look with the greatest interest to the decision of the Court of Appeal on the subject.

Mr. Newton said he thought that the consideration of so important a subject should be adjourned, so that the members might have time to read the paper before discussing the many important points it contained.

The Chairman.—It is doubtful if we shall have an opportunity this session to hold a meeting for the purpose.

Mr. John Slater, B.A., remarked that he had listened with the greatest interest to the paper, but there was such an enormous amount of matter in it that it was very difficult to follow the several points that had been raised. Mr. Meadows White had undoubtedly given them a great deal to think about. They were all aware, from their own practice, of the number of points on which they were likely to go wrong, and on which they now and then required a little legal advice. He would like to know from Mr. White particularly what the position of the architect or the building owner was, with regard to the quantities, if the building owner paid the quantity surveyor himself for the quantities, what difference that made in the position? He supposed it freed the quantity surveyor from any contract with the builder, but did it make the building owner or his architect responsible for the quantities if they were supplied to the builder by the payment of the building owner? There was also a point in the second series of cases that he had not quite followed. It was the question of the stamping of the agreement. He understood Mr. White to say that if the architect agreed to accept work under certain conditions from a School Board, or any public body, it was desirable that a stamp should be put upon the letter of appointment.

The Chairman.—It should be an appointment under the seal.

Mr. White.—The question of the stamp was a by-point, which I put in. If a letter which passes between the architect and employer amounts to a contract to do work at a price, it amounts to an agreement, which should be stamped, and it has nothing to do with the statutory powers of the School Board. It is a simple point of caution.

Mr. Slater, continuing, said he thought on the whole that the great general lesson to be learned from what they had heard that evening was the need of accuracy in all the documents they drew up (applause). It was quite clear that people got in the way of thinking that such-and-such a thing generally represented what they meant, but it was evident that those general representations were liable to a great deal of abuse; therefore, the more correct they could make their documents and letters of contract, the better it would be for them all. Mr. Slater concluded by proposing a cordial vote of thanks to Mr. White.

Mr. Henry Dawson agreed that the paper was a most important one, but that it would be utterly impossible to go over all the points that had been raised that evening. He hoped, therefore, the council would see their way to appoint an evening as early as possible for the full discussion of the subject. He would only address himself to the last case referred to by Mr. Meadows White,—a most important case,—and one which was now to be submitted to the Court of Appeal. There was a custom of long-standing that wherever the quantities were taken off by the quantity surveyor, distinct from the architect,—which he wished they always were,—there was an implied understanding that he was to be paid by the builder, and be responsible to the builder. At the same time, he had always found the difficulty of fastening this liability, and he believed there were architects besides himself who made it a practice when tenders were invited from builders to issue to them certain conditions of tender. One of those conditions would run thus: "that the builders tendering shall accept the bills of quantities prepared by Mr. ——, the surveyor, and supplied to them by him, and that the charges of the said surveyor shall be paid by the builder whose tender may be accepted, so that no liability shall lie upon the building owner," or words to that effect. There were other general conditions of tender which were also useful, which did not refer to this point, and these were followed by general conditions of contract, so that practically the substantial essence of the building contract was put before the builders when they tendered. There was also a useful clause, which he believed was pretty general, to the effect that before the builders affixed their prices to the bills of quantities, they were specially requested to inspect the drawings and specifications.

The Chairman.—Would you furnish us with your conditions for tendering? They may be interesting as a notation to your suggestions.

Mr. Dawson.—I should be ready to do so, although I think similar conditions are used by other architects.

The Chairman.—I think they are likely to be exceedingly valuable.

Professor Kerr said he had followed with the greatest interest the paper read by Mr. Meadows White. It was something to have a gentleman of such distinction coming amongst them, and treating the subject with such judicial sense and fitness. Gentlemen present might remember that some time since he (the speaker) took the liberty of dealing, not exactly with the question of law, but with the question of contract, in a paper read before the Institute, and in which he laid down one or two propositions, and he was gratified to find that Mr. Meadows White expressed a favourable opinion upon the points which he then took up. One proposition he then submitted was, that a contract between the employer and the builder was a matter of practice relying very much more than was generally supposed upon mutual confidence in the architect, implying perfect confidence in his intelligence, his acquaintance with his business, and, above all, his good faith. He laid it down that so essential in practice were those principles, that they formed the very basis of the building contract, which he was sure Mr. White, as much as any one, would say was a contract of the utmost possible complexity, and one that involved so many risks of misunderstanding and dispute, that it was almost impossible to avoid them, unless there was some superior power recognised by both parties, so as to impart into the contract and certificate a certain elasticity. And he thought Mr. White would agree that even courts of law were anxious to admit this by the way in which they upheld the apparently arbitrary authority of the architect in dealing with these matters. Another point which he made at the same time was that an architect, actuated above all things by the desire to maintain perfect impartiality, would do his very utmost to avoid all speculative conditions in his contract. He believed he went so far as to say that if an architect felt himself obliged to allow speculative conditions to enter into his specification or form of contract between employer and builder it was almost negligence on his part. That was a strong proposition to make, but it was one which he thought, to a certain extent, all good and true architects would agree with. There were certain provisions introduced into contracts which Mr. Meadows White had referred to at the commencement of his observations, and which were really introduced, he suggested, without a direct intention of their being fulfilled. These were introduced for the purpose of being used if requisite, and he apprehended that this was a form of agreement which was perfectly legitimate, provided it was properly understood and expressed. It was one of the weak points in their specifications and contracts that those conditions introduced in that way, and which the builder understood in that way, were not distinctly mentioned as being of that category. The builder's absolute trust in the architect in a thoroughly respectable transaction was the element which must never be forgotten. If the architect forgot it, the builder did not. The architect's good faith towards the builder, which he had insisted upon on a former occasion, and which he still insisted upon, was the most important element in the attitude of the architect to-

* See letters in the *Builder*, Jan. 21 and Jan. 28 last. This case may be said to be still *sub judice*, as it has been entered for appeal.

wards the contract at large. To come to a few particulars, he might mention the great importance which Mr. White had referred to as being attached to the final certificate of the architect. They knew the final certificate must not be given without great consideration, and could not be re-opened. At the same time, they must admit that in practice very often the final certificate had to be written and signed with the hope that it might be acceptable to both parties, and with the slight apprehension that possibly there might be some question raised as to its validity. He understood Mr. Meadows White to say that the judges had ruled that unless what he called fraud, or what he (the speaker) would rather term bad faith, or the want of good faith, could be shown, the final certificate was, and ought to be, absolutely binding. They must not forget that the judges dealt with building cases somewhat reluctantly. They recognised the difficulty of dealing with expert matter, even with the assistance of expert witnesses, and they were, therefore, disposed to give the greatest force possible, consistently with the principles of jurisprudence, to the position of the architect as an arbitrator between his employer and the person employed, that is to say, the builder. With regard to orders for extras, they all knew those were very difficult things to deal with. It was easy to put a clause into the specification that no extras should be recognised unless a written order was produced, but it was extremely difficult to carry out that in practice. At the same time, a builder might be warned in this way,—that it really was the duty of a man of business, who was going to make a claim for extras, to indicate at the time the extra arose, as far as he could, if he intended to make that claim (applause). Therefore, although in a few cases the clause might operate harshly, yet the understanding between architect, builder, and employer was secure. It might be left to the builder, not to look after himself alone, but after the legality of the transaction, considering that to be part of his share of the duty. To make the employer a party to the giving of orders for extras was a thing scarcely possible in most cases. They could not get an employer to enter into the question by going back to first principles, and really the discussion requisite was so lengthy that one rather preferred to trust to his good faith at the end to pay for that which he had had,—which every honest man should do. As to the payment for quantities by the builder, the custom, as he understood it, was, that the payment for quantities was to be made out of the first certificate by the builder to the quantity surveyor; but the difficulty was how to pay for the measurement of the extras and omissions. He did not think it was a practical difficulty; surely the employer ought to pay for the measurement of extras and omissions, because it was added to the certificate. Therefore, if it was payable by the employer, and the builder failed to pay, there was no hardship in asking the employer to pay. Another point was, when the employer interfered before the final certificate was given, and ordered the architect as his employé not to certify. He had an order of that kind in one instance, and he was sorry to say he was weak enough not to certify. There was no very particular difficulty in connexion with that case, and as it could not now be recognised he might say that the only difficulty in the matter was that the employer was unable to pay (laughter). He was unable to pay an unexpected balance for extras, and he ordered him (the speaker) not to certify. He would like to know Mr. White's opinion on that question. Lastly he would mention the rule that was springing up amongst them of getting over all difficulties by making the bill of quantities part of the contract. If that were done he apprehended that primarily the accuracy of the bill of quantities was guaranteed by the employer. It was, of course, exceedingly important that the employer should know what funds he had to provide. That was a very legitimate demand on his part; though it might be somewhat difficult to satisfy that demand, in a country like this, and in times like the present, it was a demand which he was entitled to make. Why, then, should not the builder have the task thrown upon him of examining the quantities of the surveyor, and satisfying himself as to their accuracy before he signed the contract? It seemed to him that in all cases the quantities ought to be checked in some way, especially on behalf of the party who had nothing to do with drawing them. If the responsibility was not to be thrown on the builder, but had to be retained by the employer, it would be well for the employer's sake that the quantities should be checked. Surveyors, as a rule, did not make mistakes in their quantities. Mr. Rickman, who was not present that evening, and who might be said to be one of the best authorities upon the subject, pointed out to them that two-thirds per cent. was the ascertained margin of error. That percentage was not very much to quarrel about, and most builders did accept bills of quantities from respectable surveyors, knowing by experience that the risk was very small. On that ground the necessity for the examination of quantities might not be very great, but still, at the same time, they as architects must recognise in the abstract that the principle of examination ought to take place, and if it were done before the contract was signed it would get rid of very great difficulties. (Hear, hear.)

Mr. Thomas Blashill said he was not now so interested in the matter as he had been for something like a quarter of a century, but he trusted he was not the less competent to speak upon it, and he might be at the same time more impartial. During the whole of that time he was a good deal astonished that an important piece of business like this should be left to custom, and should not be a matter of the most distinct arrangement between the parties in every particular case. It struck him that this was one of the things which the Institute might,—acting upon a firm basis,—take up, and not leave it until they had made it so clear that, unfortunately for certain members of Mr. Meadows White's profession, there would be no further litigation in regard to the question. It had struck him that there were about three ways in which business of this kind might be conducted. There were only three parties who should be responsible for errors in quantities,—the one was the owner or employer, the second was the quantity surveyor, and the third was the builder. They might all have their own opinion as to which was the proper party to be responsible. In his practice he never found any owner who had the least desire to be responsible for quantities; and so far as he was able to understand the matter, they were always very urgent to have a contract which would leave them quite free of further responsibility when the price of the work was fixed, and not responsible for any errors of the quantity surveyor. If they found a case,—and there might be many,—where the owner was willing to be responsible, the quantities must be prepared for him and paid for by him, but he did not himself see how they could be made, as was often said, a part of the contract. He thought that to be a misnomer, because practically they were the substance of the contract. In the second case, it was his invariable practice, when he had made out drawings and specifications for a client and instructed the quantity surveyor to take out the quantities, that the builders should be written to and informed who had taken out those quantities. If they had any doubt as to the person whose name was given them they could refuse to tender. If, however,—as always happened to him,—they were satisfied, they were made clearly to understand that the quantity surveyor must be paid by them and that they must settle with him and not with the client as to any errors there might be. It might be a better plan, perhaps, than any which he had adopted not to allow the surveyor's money to come into the contract at all, but to arrange that directly the contract was settled some separate contract should be made between the quantity surveyor and the builder, and the money paid as a separate transaction between the two. That would settle the whole business, and he did not see why the Institute should not take up the matter and argue it out. He took it that a sufficient sum must be paid,—whether two-thirds per cent. or whatever would cover his risk. But there was a third way in which the builder would be responsible, and which had been referred to, a way in which it should be made clear that he did check the quantities before signing the contract. In that case the parties must have sufficient time to do it. He thought as a result of the discussion that the different modes of arranging between the three parties should be fully considered by some Committee of the Institute, or in some other way, and that a clear understanding should become to as to what the profession considered the best way of dealing with the matter.

Mr. Reeves, referring to the remark that a contract with a School Board should be under seal, said he understood that it had been held in one case that it was not necessary to be under seal, as the architect had been appointed as an officer of the Board. The Elementary Education Act provided that a School Board might employ or appoint its officers by a minute. Then came the question what constituted an officer of the Board, and whether an architect, under the circumstances, was an officer of the Board. A remark had been made about an architect endeavouring to recover charges for measuring alterations for the builder, and he believed it was admitted that he had to add that commission to the builder's certificate. That, however, was a very bad practice, and one which was not in any way necessary. It was one of the payments made through the builder which an employer might reasonably object to, and was one which in his own practice he had never found necessary, as he always charged the employer with it. With regard to Mr. Dawson's condition of tender, it appeared his conditions exonerated the building owner, but did not fix the responsibility on the quantity surveyor, and he did not think it was anything nearer settling the question than leaving it entirely open.

The vote of thanks was then put and carried by acclamation.

Mr. Meadows White, Q.C., in replying, said that the gentlemen who had commented on his paper had supplied material for several discussions. In regard to any contemplated litigation on any matter believed to rest on custom, it was well to point out that a perfectly simple case should be chosen to raise the question of custom, and not one which brought in other considerations or side issues, leading the mind off from the custom and making the case an exceptional one, and not of general application. Mr. Slater had asked how it would be where the building owner paid the quantity surveyor. That depended on the terms and what the specified contract was. He had mentioned a case where a custom of that sort was entirely excluded, and had no operation. All those were matters dependent on contract. If the custom was universal, and there was nothing inconsistent with the contract, the custom was incorporated into the contract; but what Mr. Slater referred to struck him as being a special and peculiar contract between the building owner and quantity surveyor. Mr. Dawson had suggested what his practice was, and he seemed to be in the habit of introducing into his specifications a clause similar to Clause 11 in the contract in Priestley and Gurney *v.* Stone, which some of the witnesses at the trial of that case, eminent builders, said they would not have agreed to. Prof. Kerr had made a very valuable speech, but the time at his disposal was too limited to deal with it; and the same remark applied to Mr. Blashill's speech. A point had been raised as to contracts with the School Board. Mr. Justice Mathew had held in one case that the architect was appointed as architect of the Board, and that made his appointment sufficient by resolution without the seal. But supposing the School Board had dealt with him by appointing him as architect in an isolated transaction, that would be left to a subsequent case if it arose, and it would depend on the exact circumstances of the case how the decision would go.

The meeting then terminated.

Paraffine Paint for Walls.—According to the *Mittheilungen des Bayrischen Gewerbemuseums*, a solution of paraffine in heavy coal-tar oil is especially suitable for the walls of houses exposed to the weather. A number of experiments made on damp walls, it is stated, have yielded satisfactory results. Papered walls, which formerly in wet weather showed dampness, gave no traces of damp after the application of the paint externally. The solution is prepared as follows:—One part of paraffine is solved in a moderate heat in from two to three parts of coal-tar oil. Care must be taken to use sufficient oil, so as to prevent the solution from becoming sticky after cooling. In order to keep the solution liquid during use, the vessel containing it must stand in hot water while it is being applied. The painting should be done on hot days, when the bricks or stone are very dry. One application is sufficient.

THE ORIENTATION OF CHURCHES.

A MEETING of the St. Paul's Ecclesiological Society was held in the Chapter-house of St. Paul's Cathedral, on Wednesday, May 23rd, Mr. Brown, one of the vice-presidents, in the chair, when a paper was read by Mr. E. P. Loftus Brock, F.S.A., on "The Churches of Great Britain and Ireland compared in respect of their Orientation with those of Italy and the East."

Reference was made to the fact that the cardinal points have had great influence upon the position of ancient buildings, and many were named whose sides face them, the most important being the temples at Jerusalem. In these the element of completeness or perfection doubtless was symbolised. With regard to the subject of turning to the east, the rising of the sun, which must have appeared as a daily miracle to prehistoric man, seems to have originated the custom early in the world's history, and many buildings, among which most probably is Stonehenge, were planned with reference to it.

The turning to a sanctuary, as Daniel did at Babylon and as the Mahommedans do, had also its influence in men's minds. These old world beliefs, rightly or wrongly, found a place in the growth of the Christian religion, and men were taught to turn to the east, it was supposed, because all light came from the east. There was the Holy City, and there, according to the Jewish belief, would be the proclamation of the Day of Judgment. Beginning with the survey of the actual positions of churches, from the fabrics themselves rather than from old writers, the churches of the Holy Land were passed in review by the lecturer. Those of Jerusalem, of early and late date, alike are all orientated, and this is equally the case with those founded by the Greeks, the Armenians, and the Franks. Constantine's Basilica at Bethlehem is also orientated, and from the evidences collected by the Palestine Survey we now know that almost all the churches of Western Palestine are orientated, there being a tendency for their axis to be to the north of west, while two which were named have their angles and not their faces directed to the cardinal points, following in this respect the ancient sanctuary at Hebron. The churches of the East, generally, are orientated, and examples were cited at Thessalonica, Trebizond, and in Asia Minor at Myra in Lycia, erected A.D. 540. These buildings range in date from very early times to the latest works of the Greek Emperors. The churches of Constantinople, for the most part, present a curiosity with respect to their orientation, since their angles and not their fronts face the cardinal points. This is the case with respect to Sta. Sophia and many others which were named. Since Constantinople is, roughly speaking, to the N.W. of Jerusalem, it may be possible that the city was set out with regard to the position of the Holy City. While it may be demonstrated that the churches of the East are, as a rule, orientated, it is evident that some of the ideas with respect to the reasons of churches being so placed must be modified. Thus, with the exception of those of Constantinople, there is no evidence that the position of Jerusalem or Our Lord's sepulchre had any relation to it, for churches in the city look east and not to the sepulchre, while others beyond Jerusalem still look east and not backwards to that city. These facts show that the old world belief of the rising of light in the east alone regulated the practice.

Coming to Rome, a totally different arrangement, or rather the absence of arrangement, may be noticed. St. Peter's has its main front to the east and its choir altar to the west, following in this respect the ancient basilica erected by Constantine, plans of which were exhibited. Other plans for the rebuilding of St. Peter's were also shown, and none of these had any regard to orientation, and no attempt was made to alter the axis of the present building. The Sistine Chapel is placed the same as St. Peter's. The original cathedral, St. John Lateran, has its principal front east, and the other large basilicas are placed in every possible direction. A survey was next made of some of the 300 churches of Rome, attention being given principally to those in the open districts rather than to those in the heart of the city, where, perhaps, it might be thought the scarcity of land might have regulated the positions, although it did not do so in crowded Mediæval London. The churches were shown to be placed in every direction, there being no attempt made to orientate them. This was so, not only of buildings of large size, but large and small alike, and of very ancient foundation, like St. Clement's, as well as of modern date. There is no evidence, judging by the actual fabrics, the positions of which were pointed out on a large map, that orientation has ever been observed at Rome.

Next to those of Rome, the churches of Naples are most numerous; and here, again, no rule as to position can be observed. They are placed in line with those of the streets and with regard to approach, but there is no rule observed with respect to orientation. Maps were exhibited of many other typical Italian cities, and the churches of Florence, Milan, Ferrara, Pisa, Bologna, Pavia, Palermo, Turin, Genoa, and Venice were passed in review. The churches are placed in every possible direction, following the lines of the streets for the most part, when the city is laid out in squares, as is the case at Turin. Some of the great cathedrals, like those of Florence, Pisa, Milan, and Venice, are orientated, while the churches go their own ways. Byzantine influence doubtless accounts for the position of St. Mark's, Venice, and also of those of certain orientated churches along the eastern coasts of Italy, recently described by Mr. Freshfield. These owe their present fabrics to the Normans, who captured the country from the Greeks. There is thus evidence that wherever in Italy the power of the papacy was not felt, or where it was not strong, there the orientation of the churches becomes apparent.

Probably no country was more under the influence of Rome than Spain. A review of its churches shows that they are not orientated; and those in Barcelona, or the cities in Catalonia, and those of Madrid itself, were referred to. Before leaving the churches of Rome, Italy, and Spain, certain plans of churches were exhibited, showing the positions of their side altars. These are grouped all round the buildings cited, without regard to aspect, so as to render the axis of the main fabric a matter of little moment.

Passing over the Alps, orientation begins to be observed in the South of France.

Turning attention to our own country, the marked contrast of our churches, which, as a rule, are orientated, is at once observable. Beginning at Canterbury, it was shown that the original cathedral, the plan of which Professor Willis has traced from ancient writers to have resembled the original St. Peter's, yet had this great difference, which exists to the present day. While the apse of St. Peter's faced west, that of Canterbury was east. Augustine found on the spot a dilapidated Romano-British church, which he repaired. It was most probably orientated, following the example of the other two Romano-British churches, St. Martin's and St. Pancras. Augustine, not having orientated buildings in Rome, would hardly have brought the practice thence, and if he had found the ancient church so placed would not have altered its position because it was so, churches being placed at every angle at Rome. The evidence of the two examples named is not small, and it enables the inquiry to start with the certainty that Romano-British churches (long anterior to the time of Augustine) were orientated. Their evidence may be supplemented by others. The Romano-British church at Lyminge is so placed; so is that, if it is actually a Roman church, at Reculver. Turning to the ancient Roman castles erected to guard the eastern and southern coasts, it was shown that each contains an early orientated church. At Richborough, the solid mysterious platform on which rests the form of a cross was referred to. The angles, and not the faces, are directed, nearly, to the cardinal points.

The churches of Wales appear to stand on very ancient sites, marked in many instances by early Christian inscribed stones. They are dedicated to saints of the Romano-British Church, agreeing in this respect with those of Cornwall and Devonshire, and like them they are orientated as a general rule. Certain examples of very remote antiquity were cited, showing that the custom was observable in them at the early date of their foundation. The Isle of Man has a large number of ancient ruined buildings, called Cabbals or Treen churches, of very minute dimensions and of great antiquity. They are orientated.

In Ireland, more than in any other European country, churches and oratories of very early date are to be found, sometimes singly, sometimes, as at Clonmacnoise, grouped together. Their construction frequently agrees with that of the beehive huts of the early Celtic inhabitants, justifying the claim made for their high antiquity. Although some of them are sometimes out of parallel, yet they do not differ in this respect from what is found of variation in other countries. The rule is for them to be orientated. The churches of Scotland resemble those of Ireland very exactly, and what may be said of one country agrees with what is found in the other.

At Teamprell Ronan, on a bleak rock in the Northern Ocean, there is a small oratory, to which a nave has been added at a later date. Its angles and not its faces front the cardinal points.

There is thus abundance of evidence that the early Church of these islands adopted orientation as a general rule. That this was not introduced by the Italian missionaries with Augustine is proved by the facts that, firstly, it was not at Rome to be introduced; and secondly, because it was to the heathen Saxons and not to the primitive Church in the unconquered portions of our country that the mission was addressed. There was to be no recognition or communion with this church, and, however much there may have been, it was in the individual capacity of its members, and not officially, that such intercourse existed. The early Church continued its separate existence and its independence as long as its territory remained, and until after the gift, by the reigning Pope, of Ireland to Henry II.

The Saxons learned orientation of the indigenous church, and not from Rome. They followed the custom very thoroughly. Two instances were cited. One was York Minster, which owes its present axis to a building of remote antiquity on the site, a portion of which exists in the crypt. The other was Chester Cathedral. Although the churches of the city line out with the course of the Roman streets, slightly out of east and west, yet the cathedral has a truer axis.

In conclusion, the lecturer pointed out that while the churches of the East are orientated, but few in Italy are so. Those of these isles are orientated, and the practice can be traced to remote times.

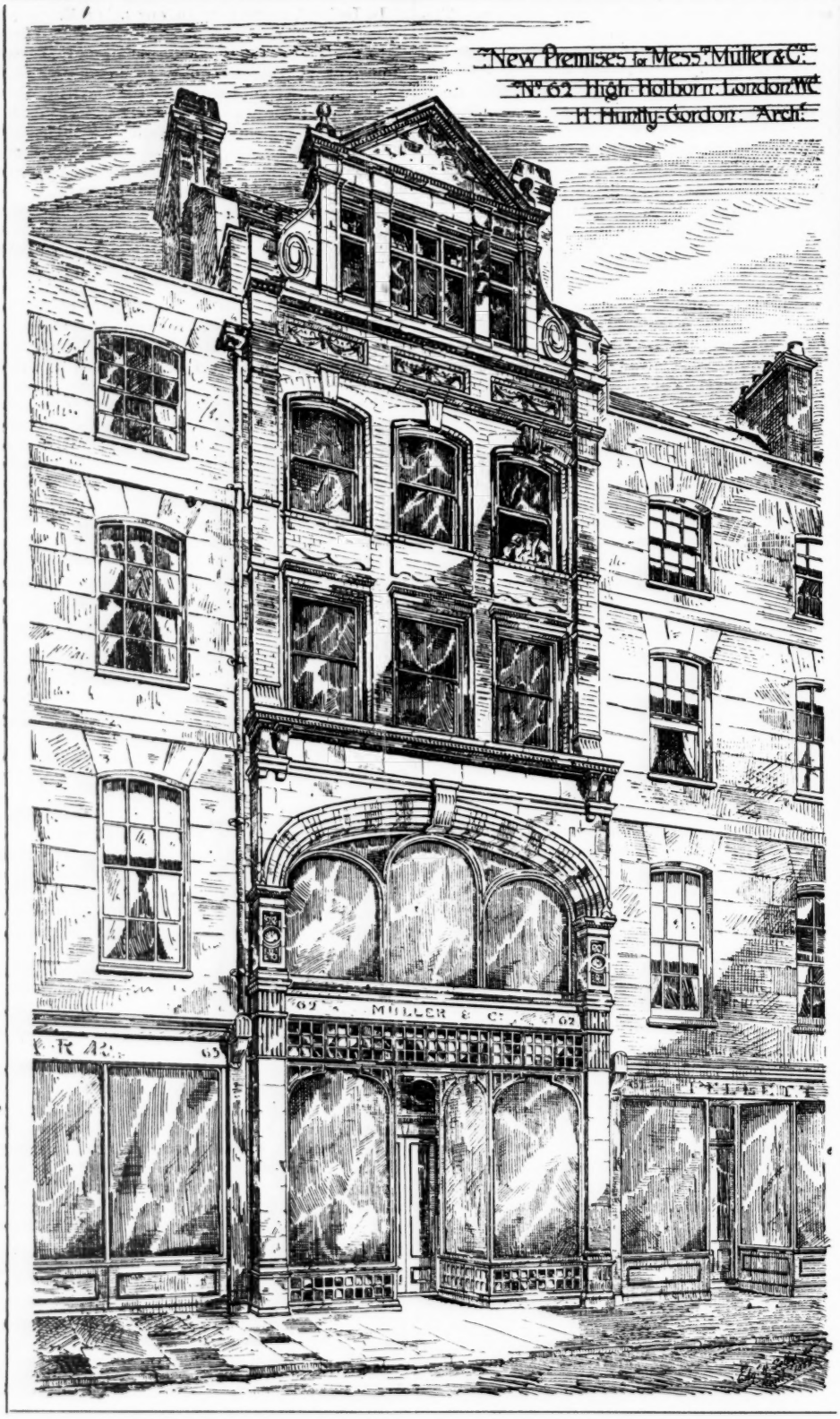
The inquiry has interest in respect to the origin of Christianity in Britain, and it appears likely that it was introduced from a country where orientation was practised. Turning to the custom itself, it might appear puerile to many minds. There was no direction for it in the canon of the New Testament, and the Head of the Church was in the midst of the church Still it was an old custom which need not be given up for the sake of change.

The lecture concluded by some allusions to attempts made by reformers to alter the practice, among whom were St. Patrick in early times, and Sir W. Mildmay in the sixteenth century.

ARCHITECTURAL ASSOCIATION VISITS

THE new bishop's residence and clergy-house, St. George's, Southwark, which was visited by the Architectural Association last Saturday, has taken the place of the clergy-house and school designed by the late A. Welby Pugin, which, although picturesque externally, was found inconvenient in internal arrangement, and unsuited to the present requirements. The new building, designed by Mr. F. A. Walters, F.S.A., incorporates some few parts of the older structure, many of the details of which have been modified and re-used. Thus, although the style of the new work is based on a later phase of Mediæval art than that of Pugin, the architect appears to have been somewhat hampered by the traditions of the original designer, and the building rather gives the impression of being behind the age, and out of touch with the latest development of modern architectural design of the Gothic school. This one especially notices in the treatment of the principal stair, where the Pugin tradition is strongly shown with a result less pleasing than is found in the lesser stair, charmingly designed in wood.

The building is entered by an open porch from St. George's Road, leading to the hall and principal stair. On the right of the entrance are the apartments of the bishop, on the left



the general dining-hall, occupying the position of the former school-room, and beyond it the library and clergy house. The bishop's apartments comprise,—on the ground-floor, waiting-rooms and secretary's room with muniment chamber; on the first floor, a suite of three reception-rooms with bedrooms over. The clergy-house contains, in the new buildings, six sitting-rooms, vicar-general's room, nine bedrooms, and on the third floor, servants' rooms. A portion of the older building remains at the rear, and contains further accommodation for clergy.

The chief feature of the building internally is the general dining-hall, with fireplace at each end, moulded beams, and panelled ceiling. A good effect is obtained in the treatment of the windows, by the use of moulded and panelled folding shutters,—a feature which is repeated in the remaining ground-floor rooms. These shutters, as well as the other internal joinery, are executed in pitch-pine, which will be stained and varnished, finished with a dead surface.

After seeing the building, the visitors inspectod the new monument recently erected from Mr. Walters's design, by Earp, to the memory of the late James Danell, second Bishop of Southwark. The design, based on that of the famous Percy shrine, shows a richly-canopied tomb, of Late Decorated detail, executed in Caen stone, the recumbent figure of the bishop being sculptured in white alabaster.

NEW BUSINESS PREMISES, No. 62, HIGH HOLBORN, W.C.

THE building illustrated in the accompanying cut has been executed for Messrs. Müller & Co., artists' colourmen, from the drawings and under the superintendence of Mr. H. Huntly-Gordon, architect. The building has been executed in a light red Mansfield stone, and red cut-rubbed and moulded brickwork upon a plinth of dark Aspatria. The joinery is of Spanish mahogany, and the roof of red Broseley tiles.

The Iron and Steel Fencing Company.—The manager of this company wishes us to say that in their method of fixing sheets for metal roofing, mentioned and sketched in our article on the Glasgow Exhibition, the capping is placed over the turned-up edges of the sheets *first*, and the keys inserted afterwards.

Illustrations.

CURDRIDGE CHURCH, HANTS.

THE new church which is now being built at Curdridge, near Botley, in Hampshire, from Mr. T. G. Jackson's designs, will replace an unsubstantial building erected during the present century in the style known as "Carpenters' Gothic." The only point of interest attaching to the present building consists in the fact that the perpetual curacy was held by Richard Chevenix Trench, afterwards successively Dean of Westminster and Archbishop of Dublin, who dates the preface to his "Story of Justin Martyr" from Curdridge.

The new church is built of brick, with flint facings and dressings of Box-ground stone outside, and of chalk inside. It consists of a nave and chancel with a western tower, and a vestry and organ-chamber with a heating-vault below it on the north side of the chancel. The general contractor is Mr. George Dobson, of Colchester.

THORNE HOUSE, NEAR YEOVIL.

THORNE HOUSE, the residence of his Honour Judge Hooper, is now approaching completion, from Mr. J. G. Jackson's designs. The walls are of the famous stone from Ham Hill, which is only a few miles distant, and the interior is finished with oak wainscoting in the hall and dining-room and principal landings. The staircase, which is also of oak, is an excellent piece of joinery, made from Mr. Jackson's designs by Mr. Colley, a workman in the village. The masonry is by Mr. Trask, of Ham Hill; the walling and bricklaying by Mr. Kimber, of Odcombe, and some of the interior panelling and joiner's work by Mr. Estcourt, of Gloucester. The heating apparatus is by Messrs. Haden & Son, of Trowbridge.

PORCH OF ST. MARY'S CHURCH, PORTSEA.

THIS design, by Mr. A. W. Blomfield, A.R.A., is a reproduction of the drawing, No. 1,803, in the Royal Academy Exhibition, of which we made mention in our last article on "Architecture at the Royal Academy."

A perspective view and plan of the church were published in the *Builder* for July 5th, 1884, with some description of the building, and the sections in the *Builder* for July 19th of the same year.

INGLEWOOD BANK, NEAR PENRITH.

THIS house, the residence of Mr. Robert Thompson, J.P., has recently undergone extensive alterations. The greater part of the front, that to the left in the view, has been rebuilt. The hall and the principal rooms on the ground-floor are panelled in oak. The small sketch in the corner gives an idea of the house as it was formerly.

The contractors were Mr. W. Grisenthwaite and Messrs. Scott, both of Penrith, who carried out the work under the direction of the architect, Mr. Geo. Dale Oliver, of Carlisle.

HOUSES, CADOGAN SQUARE, LONDON.

THE houses we illustrate in two plates this week are now in course of erection on the west side of Cadogan-square. Externally they are of red brick with white stone dressings, portions of the walls being tile hung.

The accommodation internally varies, but roughly is as follows in each house:—Vestibule; hall, 20 ft. by 14 ft.; library, 20 ft. by 14 ft.; dining-room, 27 ft. by 20 ft.; all on ground-floor. The first floor is appropriated to drawing-room, about 30 ft. by 20 ft., and boudoir, 23 ft. by 20 ft. There are about twelve bed and dressing rooms, and the usual offices.

The reception-rooms will have oak floors and panelled ceilings.

The contractors are Messrs. Foster & Dicksee, of Rugby, the architect being Mr. Edwin T. Hall.

Northern Architectural Association.—At a recent meeting of this Association the following officers and committee were elected for the Session 1888–89:—Mr. E. J. Hansom, F.R.I.B.A., President; Mr. G. G. Hoskins, F.R.I.B.A., and Mr. W. S. Hicks, Vice-Presidents; Mr. Jos. Oswald, Hon. Treasurer; Mr. Frank W. Rich, Hon. Secretary; Mr. E. Leadbitter, Hon. Solicitor; and Mr. W. H. Knowles, Librarian. Messrs. Dunn, Shewbrooks, Knowles, Glover, Reay, Moscrop, and Oliver form the Committee.

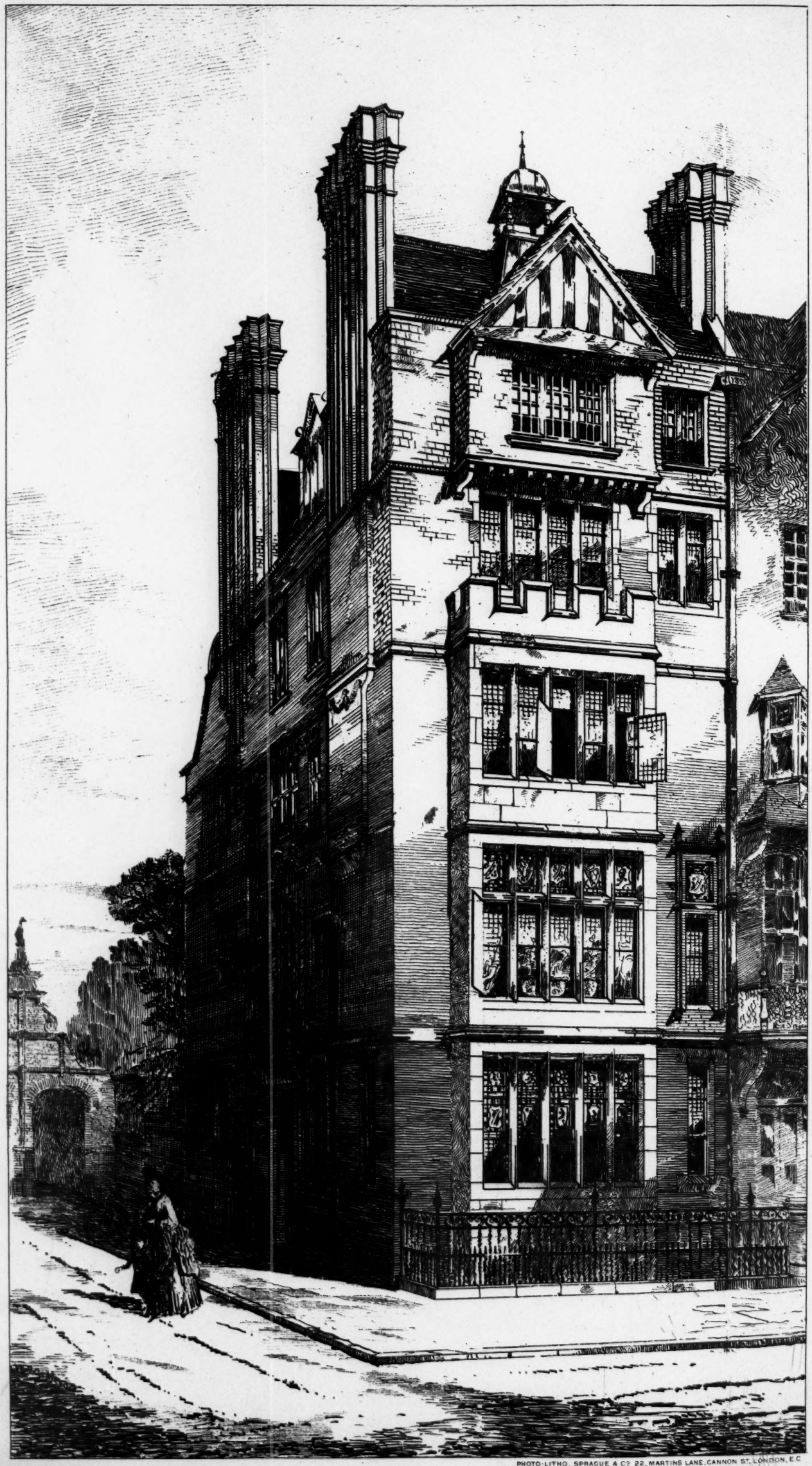


PHOTO-LITHO. SPRAGUE & Co 22, MARTINS LANE, CANNON St. LONDON. E.C

A HOUSE IN CADOGAN SQUARE.—Mr. Edwin T. Hall, F.R.I.B.A., Architect.

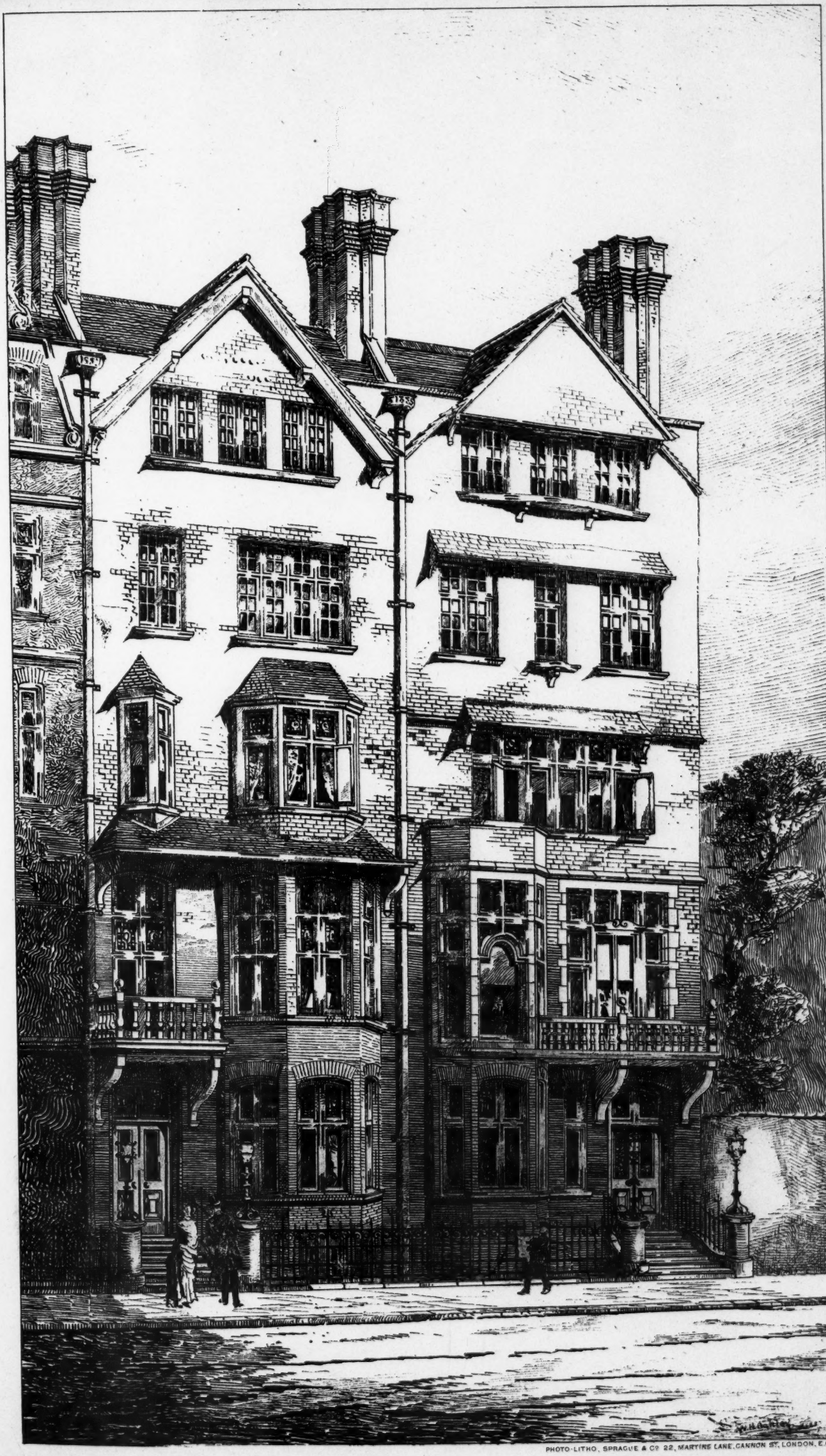


PHOTO-LITHO. SPRAGUE & Co 22, MARTINE LANE, CANNON ST, LONDON, E.C.

HOUSES IN CADOGAN SQUARE.—Mr. Edwin T. Hall, F.R.I.B.A., Architect.

VIEW OF OLD HOUSE BEFORE ALTERATIONS.

INGLEWOOD BANK, NEAR PENRITH.—Mr.

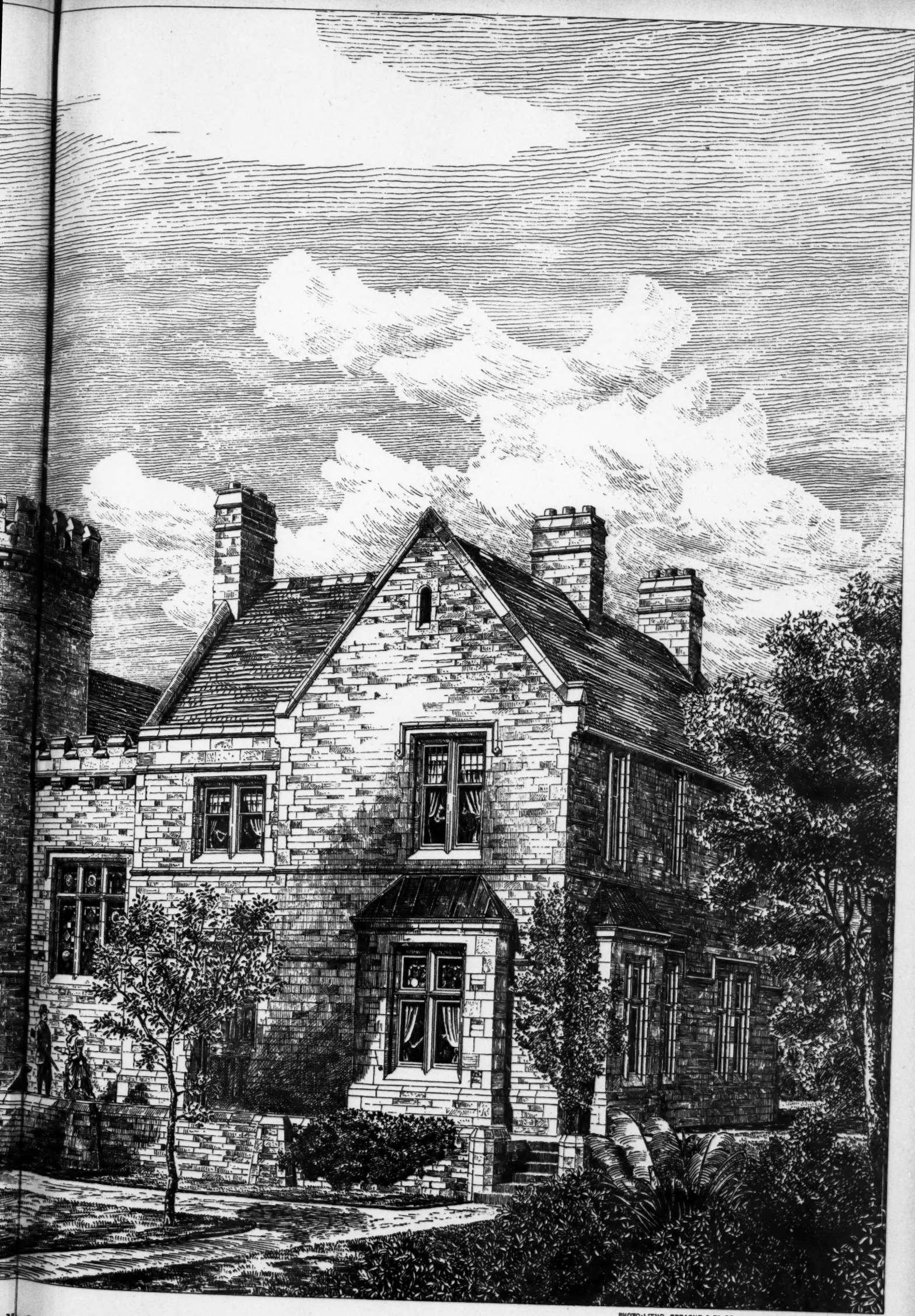
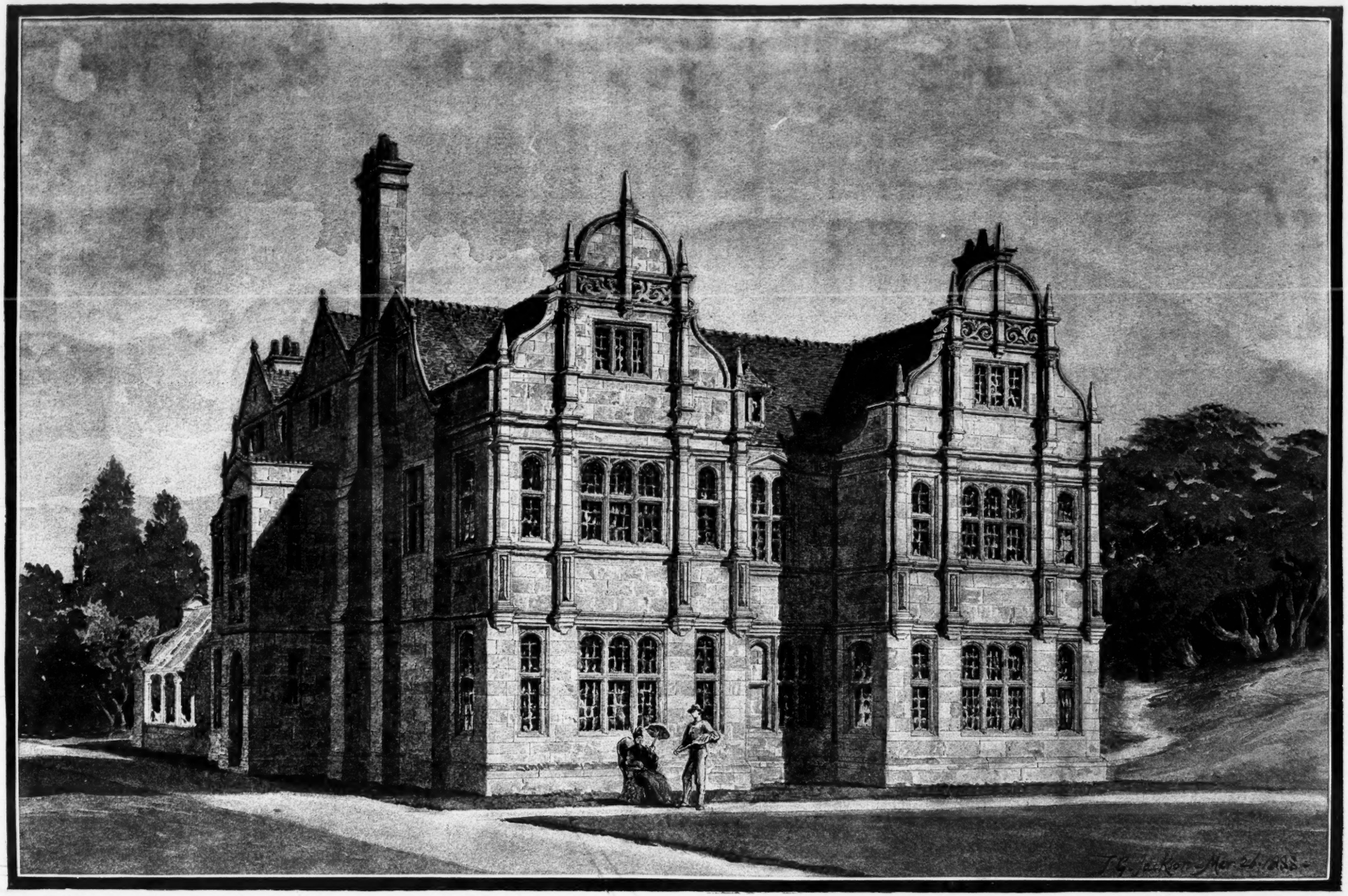


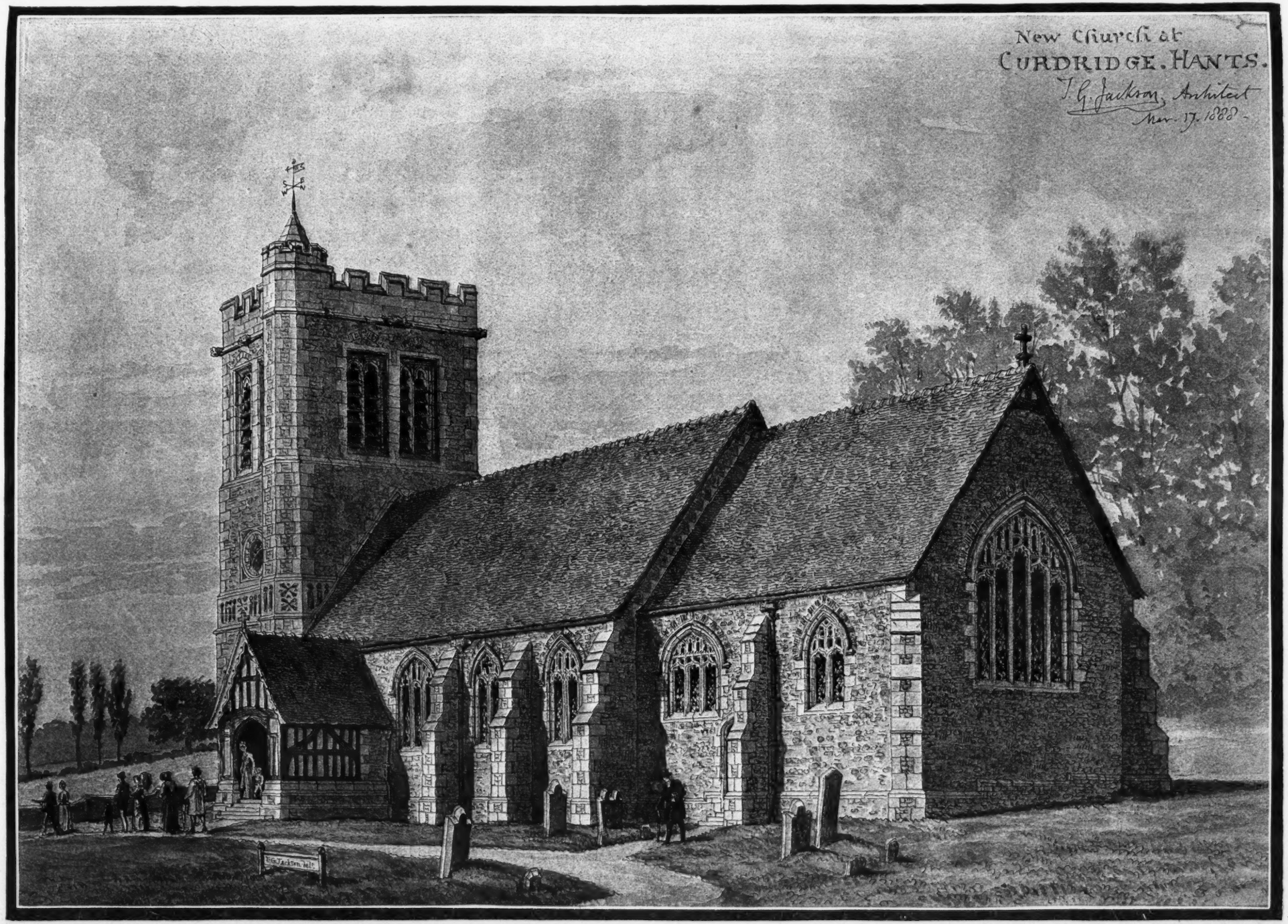
PHOTO-LITHO, SPRAGUE & Cº 22, MARTINS LANE, CANNON ST, LONDON, E.C.

—Mr. George Dale Oliver, A.R.I.B.A., Architect.



THORNE HOUSE. MR. T. G. JACKSON, ARCHITECT.

The Phototype Co., 303, Strand, London.



The Phototype Co., 308, Strand, London.

THE GREEK AND ROMAN STAGE.

THE fifth lecture* by Sir C. T. Newton was delivered on May 25th, the subject being that of the costume of Greek actors and of the constitution of dramatic guilds in antiquity. Greek dramatic costume was of four kinds, that of tragedy, satyric drama, and the old and new comedy. The first of these was conventional, probably derived from the dress of the priest of Dionysos; it seems to have been finally settled by Æschylos, and after his time to have remained unchanged. It consisted of a long chiton, richly ornamented with purple stripes or with flowers and ornaments, with sleeves reaching to the wrists, and a high rich girdle. With the high buskins and masks a greater bulk of body was necessary: this was attained by means of padding, over which other long garments were worn. Women wore a purple train, and there were special details which served to distinguish fugitives, mourners, soothsayers, hunters, queens, &c.: these were either distinctions of colour or headdress, or the attributes which the actor carried in his hand, such as torches for the Eumenides, and branches bound with wool for suppliants. The buskin, *cothurnus*, was improved by Æschylos, and always used in tragedy: the sole was of wood, square at the toes, of height varying with the importance of the part; the choros wore a dress short enough to admit of dancing, a himation, and lower shoes, *krepides*.

In the satyric drama, the actors wore the short chiton, and a high buskin, such as was used by hunters: and the choreutæ were naked except for a girdle. In the old comedy dress was much nearer to that of real life, as we see from the vase pictures of Lower Italy, where in one case we can distinctly recognise a scene from the "Frogs" of Aristophanes. At this time the actor seems sometimes to wear only the *somation*, a kind of striped jacket and hose, or a chlamys, while the padding, *progastridion*, is a separate piece distinguished by its colour: different headdresses indicate different personalities, such as crowns for kings, a *petasos* for Hermes, and a laurel wreath for Apollo; or else the gods have their attributes, such as the thunderbolt for Zeus, and the club and lionskin for Herakles. Some grotesque costumes are introduced, as the Pseudartabas in the "Acharnæ," and Iris in the "Birds": the *himation* of the choros of the "Clouds" was variegated, while in the choros of the "Birds" four musicians were dressed as birds: the feet are generally bare.

The costumes of the new comedy are known to us from terra cottas, mural paintings, and from the works of Terence and Pollux. There the *somation* was worn, but without the exaggerated padding: the length of the chiton varied with the character represented, and the himation was universal, both for male and female parts. The feet were clothed in the *embas* or *soccus*, while different-coloured garments indicated different characters: thus, parasites wore dark colours, except at weddings; slaves wore white; and, according to Pollux, green or dark blue was prescribed for old women.

The masks were originally made of linen, painted with appropriate expression of the features. According to Quintilian, there was a mask with one eyebrow raised, the other lowered, to express changes of mood; in later times the material employed was cork. Pollux enumerates twenty-eight varieties of tragic masks, of which six are for men, seven for youths, nine for women, and six for slaves. These had a straight nose, a noble and pathetic expression, with a wide opening for the mouth. Occasionally the action required a change of masks in the same person, as when Œdipus appears after being blinded. In the case of persons being ridiculed, the likeness of the person was sometimes rendered accurately, or it might be a caricature. The hair, which is brought to a point over the forehead, is altered to suit different characters: thus, dark hair indicated suffering or unlucky persons, foxy red the cunning slave: short hair was characteristic of philosophers, thick clusters of curls meant physical strength. In comedy the mask is usually more or less bald. Brown skin is associated with bodily health, a red skin is appropriate to a messenger, while a clear red is a sign of rascality, and belongs to the part of a slave.

In literature we frequently meet with evidence of royal patronage of the drama. In the fourth century kings and generals were accustomed to celebrate the success of an enterprise by a scenic *agon*. Thus Alexander the Great celebrated the capture of Thebes, his return from Egypt, the capture of Darius, and his own marriage, with splended dramatic entertainments, and celebrated the Dionysia on the Hydaspes; and in the last two centuries we hear of Greek actors playing in all parts of the civilised world. The Romans also carried on this custom; Antony and Cleopatra passed a whole winter in acting plays; and in the latest inscriptions we find mention of games in all parts of Greece at which dramatic representations were given. The poets of the new comedy are distinguished from those of the old comedy, and there is also mention of the old tragedy. The expenses of these entertainments were defrayed in various ways. At the marriage of Alexander, Greek, Persian, and Indian personages bore the cost as a liturgy; in some cases there was the interest of endowments, the State making the contract with the players. In these times, the drama of Æschylos is never mentioned, Sophokles but rarely, while Euripides maintains his popularity down to Imperial times. In comedy the old Attic plays became obsolete, Menander being the universal favourite.

From the inscriptions of the second century B.C. we learn a good deal about the guilds of scenic artists, which seem to have existed generally throughout the cities of Greece and Asia Minor. These guilds or synods had officers of various titles, elected as a rule annually; thus, in the Athenian synod there was an *epimeletes* and *tamias*, probably finance ministers; a *grammateus*, who saw to the execution of honorary decrees; and an *epistates*, appointed for a separate function. They seem to have been possessed of real property, of which the control was vested in the popular assembly, all members having equal weight; the priest of Dionysos being the chief magistrate, and giving his name to the year. The members, *technitæ*, in connexion with their scenic function, had religious obligations, and ranked as sacred; they were exempt from military service, they were allowed to wear gold, and in public acts they took precedence after the Archon. In view of their exceptional position, the guilds even ranked themselves as independent communities, passing decrees, sending embassies, and appointing proxeni, as if they were autonomous States.

On a certain day in the year they had a solemn procession in honour of Dionysos, to whom they sacrificed monthly, as to their special divinity; other deities, however, such as Demeter and Apollo, were honoured by them; and, in some cases, such as that of Attalus, divine honours were bestowed on earthly kings.

The number of the members belonging to these guilds must have been very large, as it included all sorts and conditions of people associated with the dramatic and musical *agones*, such as trumpeters, flute-players, harpists, thymelic artists, rhapsodists, poets of all kinds, choreutæ, all manner of actors, and even the persons who let out costume; in an inscription recently found at Ptolemais, in Egypt, honouring a member of a guild, the names of the members and their respective functions are given. A synod could, in this way, supply out of its company the demands made on it in different places, their action not being confined to their own district; when the *agon* was undertaken by one company, the competition lay between members of the same guild.

The Romans encouraged these guilds, partly from a political motive, partly because of the interest taken by the emperors in the stage; under some emperors new guilds were formed under imperial patronage. Thus, a synod existed in Hadrian's time, which claimed him for its patron as "the new Dionysos." In these guilds the accounts are regulated by a controller, *logistes*, appointed by the emperor; and henceforward the democratic character of these institutions seems to have disappeared.

* For reports of the preceding lectures see pp. 318, 341, 361, and 375, *ante*.

The Inner Temple Gardens. — The gardens of the Inner Temple are, by permission of the Benchers, now open to the public in the evening, from 6 p.m. until dusk, and they will remain open during June, July, and August. The permission thus granted is intended more especially for the benefit of the poor children inhabiting the surrounding locality.

LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.

A MEETING of this Society was held on May 23rd, at the Fishmongers' Hall (by permission of the Company). Mr. Edwin Freshfield, LL.D., V.P.S.A., President of the Society, occupied the chair, and briefly introduced Mr. J. Wrench Towse, who read a history of the Fishmongers' Company, giving an account of its charters, the first bearing date in the reign of Edward III., with confirmations by the same monarch; and others by Richard II., Henry VI., and the incorporation of the Fishmongers with the Stock Fishmongers by Henry VIII., and other charters of the reigns of Edward VI., Mary, and Elizabeth. Grants of arms were also referred to, the latest being that ratified by Robert Cooke, Clarencieux, 1575. Mr. Towse concluded by calling attention to many objects of art and antiquity belonging to the Company, also to a collection of old engravings and drawings of the hall and neighbourhood exhibited by Mr. J. E. Gardner, F.S.A., and a collection of antiquities lent by the Rev. J. C. Jackson.

Mr. E. W. Brabrook, F.S.A., next read a paper on the "Eminent Members of the Company who have passed the mayoralty," and referred to an interesting work of a deceased member of the Society, Mr. B. B. Orridge, who had compiled a list of those members of the Company who had attained the position named, and also to the kindness of Mr. C. Welch, sub-librarian to the Corporation of London, who had placed at his disposal his unpublished collections of the lives of distinguished citizens. Among the eminent fishmongers he mentioned John Lovekyn, stock fishmonger, who was sheriff in 1343 and mayor in 1348; Lovekyn was again mayor, 1358, 1365, and 1366. Fabian describes him as "John Lovekyn, grocer." He removed the traffic in stock fish from the ancient Stocks Market, which was on the site of the present Mansion House, to the riverside, near Eastcheap, at the foot of London Bridge towards the west, thence called Stock Fishmongers'-row, and now forming part of the site of the present Fishmongers' Hall. He rebuilt the Church of St. Michael, Crooked-lane, where he was buried, and his mansion in Thames-street was in that parish. It became the residence of his apprentice and successor, Sir William Walworth, afterwards of Sir William Askham, twice Lord Mayor; then of Thomas Botiller, alderman and stock fishmonger; and finally became part of Fishmongers' Hall. In the third volume of the Transactions of the Society, Mr. John Gough Nichols gave an account of the discovery in the church of Walkerne, in Hertfordshire, on the back of a brass dated 1581, of a Latin inscription to the memory of John Lovekyn. This brass was, no doubt, removed about the year 1562, when the Fishmongers' Company restored his tomb, and placed upon it an English translation of the old Latin inscription, viz.:—

"Worthy John Lovekyn, stock fishmonger of London, here is leyd,
Four times of this City Lord Maior he was, if truth be seyd,
Twise he was by election of citizens then being,
And twise by the commandment of his good Lord the King;
Chief founder of this church in his lifetime was he,
Such lovers of the commonwealth too few there be.
On August the fourth, thirteene hundryth sixty and eight,
His flesh to earth—his soul to God went streyght."

Mr. C. R. Rivington next read a paper, entitled "Notes on the Parish Registers of St. Katherine Coleman, Fenchurch-street."

The members and visitors soon afterwards dispersed to inspect the various objects of interest lent for exhibition, before alluded to.

Zinc Roofs in the Argentine Republic. The British consul at Marseilles reports,—The introduction into Buenos Ayres of zinc roofs has had the effect of causing a considerable decrease in the exportation of roofing tiles to the River Plate, which was the principal source of business for the large manufacturers of St. André and St. Henri, and the price per thousand of Marseilles tiles, which, in January, 1887, was 3*l.* 4s., fell since August to 2*l.* 16s. 5d. Zinc roofs are an English invention which the Argentine architects must have found advantageous, but it is thought here that they will not remain long in use, owing to the intense heat they absorb in summer.

ASSOCIATION OF MUNICIPAL AND SANITARY ENGINEERS AND SURVEYORS:

MEETING AT LEAMINGTON.

A MIDLAND Counties District meeting of this Association was held at Leamington on Saturday last, on the invitation of the Mayor (Councillor John Fell), who cordially welcomed the visitors. The President (Mr. J. Gordon, Leicester), in thanking the Mayor, mentioned that this was the first occasion on which they had received an official invitation from the Chief Magistrate of any borough, and he hoped that it would be the inauguration of a new era in their career, and that other authorities would follow the excellent example set by the Mayor of Leamington.

Mr. W. de Normanville (Borough Engineer) read an exhaustive paper on the water supply of Leamington. Having fixed the population served by the local authorities at 28,000, Mr. de Normanville mentioned that until 1878 Leamington derived its water supply from the river Leam. On the advice of Sir Andrew Ramsay, boring operations were then commenced. Leamington stood on the New Red Sandstone formation, and the wells, after passing through alternate strata of various-coloured sandstones and marls, terminated in the keuper or water-stones division of this formation. The Town Council sank two wells, penetrating the keuper to a depth of 21 ft. and 26 ft. respectively. The water was of excellent quality. Dr. Tidy spoke of it as leaving nothing to be desired for wholesomeness; its hardness was 28 degrees. In connecting the two wells by means of a heading, 6 ft. high by 4 ft. wide, a fissure in the rock was met with in the bottom about 2 ft. 6 in. long, and having a maximum width of 10 in. From this flowed volumes of water, which defied all efforts to pen them back. When this source was first tapped it was probably capable of yielding two million gallons a day. Although it had fallen off, the supply was equal to all demands. In the summer of 1881 the line of saturation was 44 ft. above the bottom of the well. The highest point it had reached during the past two years was 30 ft. The water was raised to the reservoirs by two pairs of pumps, of the bucket and plunger type. The buckets and suction valves were entirely of gun-metal, with which the barrels were also lined. The engines, which were in duplicate, were of the horizontal, single-cylinder, condensing type. Their speed was forty revolutions per minute, producing a flow in the rising main, which was 16 in. in diameter, of about 120 ft. per minute. The height to which the water was lifted to the reservoir averaged from 165 ft. to 170 ft. From 3½ to 4½ million gallons were pumped per week. There were three Lancashire boilers, and the consumption of coal varied from nine to twelve tons a week. The works had cost 35,000*l*. In the drought of the summer of 1886, the consumption averaged 29 gallons per head a day, making a daily demand on the works of a million gallons, or rather more than the springs were yielding. To meet this excessive demand two headings were driven at right angles to a distance of 100 ft. and 200 ft. respectively, and 6 ft. by 6ft. The net gain had been 60,000 gallons a day, at a cost of 850*l*. In 1887 the Council adopted Deacon's waste-water meters, and the plan of watering the streets with river water. Although last year's rainfall in Leamington was but 17 inches instead of the average 26 inches, and this year's fall had only been at the rate of 15 inches per annum, the line of saturation was now 30 ft. above the bottom of the well, instead of 24 ft. as at the corresponding period of last year. Last mouth 14,094,000 gallons of water were used, against 19,441,000 in the corresponding period of last year. This diminution was accounted for by 1¼ million gallons having been saved in street watering, and 4¼ millions by the reduction of waste. The paper next described the scheme for watering the streets with river water, mentioning that Mr. Joseph Evans, of Wolverhampton, had erected one of Donkin's patent direct-acting and double-acting steam pumps at the pump-room, which adjoins the Leam, for pumping the water from that stream. Six of Deacon's waste water meters had been introduced into the borough, and he was thoroughly satisfied with their operation. They reduced the work of inspection to a minimum, and their chief use consisted in the detection of underground or hidden waste, burst services, faulty hydrants, blown joints of mains, and occasionally fractured mains. The meters had reduced the waste by 130,000 gallons a day, representing 590*l*. a year, value of the water alone. 365*l*. had been spent in Leamington in fixing and providing the meters in Leamington.

At the close of the paper the members adjourned to the pump-room to inspect that establishment, and particularly Mr. de Normanville's system for watering the streets from the river. The sewage pumping station was next visited, and the members then returned to the Council Chamber and discussed Mr. de Normanville's paper.

Councillor Henry Bright and Alderman Wackrill followed with a review of the waterworks and sewage works respectively, the last-named gentleman stating that the disposal of the sewage of Leamington, Milverton, and Lillington only involved a twopenny rate, as the Earl of Warwick paid the authorities 225*l*. a year for pumping the refuse upon his farm. —The discussion was continued by Mr. Vawser (Manchester), Mr. Gamble (Grantham), Mr. Carlton (Beckenham), Mr. Jones (Ealing), and the Mayor, who gave some particulars as to the electric lighting of the Parade.

Dr. Baly, Medical Officer of Health for the borough, gave the vital statistics of Leamington, showing that the death-rate last year was 15 per 1,000 of the population.

The company then adjourned to the CROWN Hotel for luncheon.

A Yorkshire District Meeting of the Association is to be held at York on Saturday next, June 9th. The members will assemble at 11 a.m. in the Council Chamber, Guildhall, by the kind permission of the Right Hon. the Lord Mayor. They will then proceed to inspect:—(1.) The wood paving work in Low Ousegate. (2.) The working of the Skeldergate Bascule Bridge. At 12·15 p.m. they will proceed in brakes to inspect the following works, &c.:—(1.) The Cement Paving. (2.) The working of Messrs. Adams & Co.'s new patent automatic sewer flushing syphon. (3.) The restoration works of the York City Walls, now in progress. (4.) The York New Waterworks, by the kind invitation of the chairman and directors of the York New Waterworks Company. At 3 p.m. there will be a meeting in the Council Chamber, when Mr. E. G. Mawbey, Assoc. M. Inst. C.E., the City Surveyor, will read a short paper on "Municipal Work in York." Afterwards the visitors will assemble for luncheon at the Mansion House, on the invitation of the Lord Mayor.

The annual meeting of the Association is to be held in London, on the 12th, 13th, and 14th of July next. The next examination of candidates for the offices of Municipal and Local Board Engineers and Surveyors will be held in London in October next, the Council having decided, in view of the comparative numbers appearing in London and the provinces, to hold both the April and the October examinations in London.

ARCHÆOLOGICAL SOCIETIES.

British Archæological Association.—In connexion with the forthcoming Congress of the British Archæological Association in Glasgow in August, a meeting was held last week in the City Chambers there. Lord Provost Sir James King, who presided, moved a resolution that a committee be appointed to make arrangements for the suitable reception of the Association, and to take measures for giving the members a hearty welcome and making the Congress thoroughly successful. Mr. John Honeyman, President of the Glasgow Archæological Society, seconded the resolution, which was adopted. On the motion of Sir Michael Connal, seconded by Dr. Marwick, a General Committee was appointed to organise the reception, including Mr. Robert Berry, Sheriff-Principal of Lanarkshire, as chairman; Sir Archibald Campbell, Bart., M.P., Sir James King, LL.D., Lord Provost of Glasgow, and Mr. John Honeyman, F.R.I.B.A., as vice-chairmen; Messrs. J. Dalrymple Duncan and William George Black, as honorary secretaries; and Messrs. John Grahame, C.A., and James Marwick, C.A., as honorary treasurers.

Bristol and Gloucestershire Archæological Society.—The Spring meeting of this society was held on Tuesday, at Chipping Sodbury. The Church of St. Mary, Yate, was visited. Mr. Bethel gave a brief sketch of the history of the church. Chipping Sodbury Church (St. John the Baptist's) was next visited. Here the vicar, the Rev. W. H. P. Harvey, received the members. He mentioned that the church was restored by the late Mr. Street. One interesting feature in the church was the ancient pulpit in the wall, on the north side of the nave. Mr. Street had no idea it was there, so thickly was the wall covered with plaster; but when this was removed the pulpit was found and restored, and was now in use. Mr. T. S. Pope said he remembered the church before it was restored, and was able to appreciate how tastefully and well it had been done,—so well, indeed, that the history of the church could now be as clearly read as,—perhaps more clearly than,—before it was restored. He had prepared a brief description of the three Sodbury churches, all being typical. The last one, however,—that of Little Sodbury,—had been rebuilt. The three churches began with that of Old Sodbury, the mother church, which was the type of the other two. Mr. F. F. Fox subsequently read a paper on "The Mediæval Guilds of Dyrham and Chipping Sodbury." A paper was also read by Mr. Trenfield on "The Ancient Borough and Grammar School of Chipping Sodbury." The members afterwards drove to Little Sodbury, where the Rev. W. Bazeley read notes on the Manor-house, time being allowed for those who chose to visit the Roman camp. At the Church of St. Mary, Hawkesbury, afterwards visited, the Rev. W. H. Boothby received the party, and Mr. Bethel gave a description of the church. From Hawkesbury the members drove to Yate-house, where the day's proceedings closed.

WATER SUPPLY AT PONTEFRACT.

ACCORDING to the *Yorkshire Post* of the 19th ult., Pontefract is in a position of some difficulty in regard to its water supply. A water famine is threatened. As the *Post* observes, "Empty water mains in the middle of market day, in the heart of a town that has been self-governed since the days of Richard II., look bad." So does the further statement that insurance companies have refused to renew fire policies on original terms because of the lack of water to put out fires. Worst of all is the statement, made on the authority of the eminent analyst, Dr. Tidy, that what water Pontefract has is "highly dangerous for drinking." As a matter of fact, says the journal before mentioned, Pontefract has for some years been troubled with forebodings of a crisis that, sooner or later, awaits most boroughs that draw their water from neighbouring wells. The only regularly organised water supply the town ever had is that which now exists. From two wells, now 13 yards and 40 yards deep respectively, the borough has for nearly forty years pumped as much water, until four or five years ago, as answered all domestic and industrial requirements fairly well. Ten years since the existing plant and machinery for distributing water was completed by the construction of a service tank at Park Hill. On three occasions within the last few years, however, the wells have failed to furnish sufficient water for the daily needs of the people, and each time the difficulty has been temporarily tided over by deepening the wells, or one of them. In 1884 the attention of the inhabitants was thoroughly aroused both to the deficiency and the impurity of the water they were drinking, and the Waterworks Committee asked Mr. George Hodson, of Loughborough, to advise them. With regard to a proposal to deepen one of the wells, Mr. Hodson then reported:—

"Sinking the well deeper will no doubt increase temporarily the flow into it by giving a greater free sectional area to the rock into which a borehole merely now passes; but this course, if followed by more exhaustive pumping, will only have the effect of sooner exhausting the already overdrawn-upon supply. The geological conditions are all against the expectation of deriving a permanently increased yield, and, on the contrary, there is very good ground for supposing, if the well is sunk into the same zone of strata as that occurring at the barracks, that the supply will be altogether lost. Judiciously sunk under proper and careful supervision, it is just possible that a supply may be obtained sufficient to meet the moderate needs of the population until a proper supply of pure water is obtained; but it is hopeless to expect from this source any such quantity of water as the future needs of modern civilisation and sanitation require, whilst a supply for manufacturing or trade purposes in addition is entirely out of the question."

After that report one of the wells was deepened, and the drift enlarged, with results encouraging for a while; but eventually it became evident that the prediction of Mr. Hodson would be fulfilled. Last March 140,821 gallons of water were being drawn from the wells daily. That quantity, according to the experts whose services have been sought, is not more

than two-thirds of what is usually found to be indispensable to the comfort and health of a population of nearly 10,000 persons. But in April it was only possible to obtain 116,034 gallons per diem, and during the present month [May] the low average of 99,089 gallons has not been exceeded. By way of husbanding as much as possible of the existing stock the town's supply is at present entirely cut off from 9 p.m. to 6 a.m., while the pressure is so feeble all the day long that residents in some parts of the borough have now and again to resort to the old pump at the Cross. The Town Council has made up its mind that something must be done, and that soon. But the question is what to do. There are four courses open. One is to tap certain springs in the Park, which are said to have yielded sufficient water similar to that in the wells for 2,000 men through two of the driest months of last summer. Another proposition is to get water from Leeds. Pontefract and Leeds are 14 miles apart, but, as Methley is supplied from Leeds, there would be only seven miles of pipes to lay. A third plan on the carpet is to ask Wakefield for a supply. The fourth course possible is to abandon the wells and go in for a complete and independent project, the outlines of which have been presented to the Town Council by Mr. Hodson, who reports that from red sandstone on the Roall estate, near Whitley Bridge Station, he has, by boring, found water which Dr. Tidy and Mr. Fairley pronounce to be thoroughly pure and otherwise suitable. As to this source Mr. Hodson says: "If so determined, the supply could also be obtained in sufficient abundance, and the machinery so planned as to provide water for the entire district of the Featherstone Local Board, including Old and South Featherstone, Purston, Streethouse, Snydale, and Ackton, as well as Glass Houghton and Carleton; whilst an arrangement might be made to deliver water in bulk into the mains of the Castleford authority if they required it." Mr. Hodson estimates the cost of a project for supplying Pontefract alone from Roall at 28,000*l.*, and of an undertaking including the surrounding places just mentioned at 43,000*l.*

LONDON THEATRES IN 1596.

SIR,—Whilst gladly recognising Mr. Henry B. Wheatley's high authority, I beg your leave to reply to the three points raised in his letter, which you printed on May 26 last:—

1. I attach much importance to the actors' school which flourished in Blackfriars during many years before 1596. It is clear that standing companies gave regular performances in certain houses or buildings,— other than inn-yards,—before their quarters were reconstructed as theatres, in the more modern meaning of that word. This was the case at Blackfriars, and in the Carmelites' refectory at Whitefriars.

2. In his "New Facts" Mr. Collier quotes from a MS. Survey, made in March, 1616,—then in his possession,—a passage relative to the Whitefriars Theatre:—"It hath been used as a place for the presentation of playes and enterludes for more than 30 yeares last by the children of Her Majestie." The stage and tirehouse are mentioned in the next sentence. Cunningham, 2nd edit., 1850, cites the Shakespeare Society's Papers, iv., 90, in saying:—"It was built about 1580, and deserted, and I believe pulled down, in 1613."

3. I was not ignorant of some particulars that we owe to Mr. Halliwell-Phillips. I showed how he differs from Mr. Collier as to the original establishment of the Globe. I did *not* give Mr. Collier's "early dates for . . . other London theatres."

THE WRITER OF THE ARTICLE IN THE *Builder* OF MAY 19 LAST.

"THE VENTILATION OF SEWERS."

SIR,—The assumption of Mr. Phillips that I am ignorant of the effects of temperature on gaseous and other bodies does not advance the argument in the least, since the assumption is groundless. I am well aware of the fact that the sun's heat is the primary cause of the wind blowing, but because the wind moves a ship along Mr. Phillips would argue that it is not the wind, but temperature, which moves the ship. In passing over a town the wind is broken up and deflected in all directions, in some cases passing down into the sewers, in others inducing currents out of them; but my experiments show that it is nearly always sufficiently powerful to overcome the effects of temperature in causing movements of sewer air.

We must not lose sight of the fact that Mr. Phillips bases his argument on the law relating to falling bodies, expressed by the fundamental formula $v = \sqrt{2\,g\,s}$ (see p. 298, *ante*), which he misapplies by neglecting all other factors, thus getting an entirely erroneous result. In order to bring this matter to an issue, I assert, Sir, that Mr. Phillips cannot produce one single instance where a velocity of 7·2954 ft. per second (p. 298, *ante*), or even per minute, can be recorded in the 6-in. ventilating-pipe of a sewer, arranged in the manner suggested by him, the experiment to be made by an independent person, on a perfectly calm but cloudy day, when the results will not be vitiated by either wind or sun, and then to be published in your journal, together with the results obtained when a moderate breeze is blowing. I am perfectly willing to abide by the result, whatever it may be.

Mr. W. P. Buchan has kindly sent me a copy of his specification No. 1,502, and, as anticipated by him, my objection to Mr. Phillips's method of ventilation is effectively met by the arrangement shown in fig. 10; the nuisance which would inevitably be experienced at the manhole at the street level shown at p. 297, *ante*, being thus remedied. W. SANTO CRIMP.

Wimbledon.

SIR,—Mr. Brown has no "pet" system of sewer ventilation, but he endeavours to put into practice that system which, to him, appears from practical experience to be in accordance with the requirements of sanitary science and common sense, viz., street-level gratings combined with high relief-pipes. The street-level gratings for the admission and circulation of the atmospheric air, and the high relief-pipes to carry away the overheated sewer air.

Too much thought, it would seem, is being given to the sentimental objection to sewer air being permitted to escape into the streets, and much too little to the vastly more important question of preventing the accumulation in the sewers of putrid matter. By sewer air I mean the air and vapour from fresh sewage, and not the gases generated by the decomposition of the filth permitted by many to remain with perfect indifference.

An engineer's first object should be to see that the sewers are properly constructed, and, if this be done, it will not be necessary to trouble much about the consequences to individuals who may chance to stand over the ventilating grates.

It is not sufficient to say that "it is well known that deaths have resulted from inhalation of disease germs when passing over street-gratings," an assertion without proof is of little value. I might reply by saying "it is *not* well known," and, when doing so, believe myself to be within the bounds of truth.

It is perfectly true that, in many instances, nausea has been caused by the smell of sewage, it is equally true that nausea has been caused by the smell of manure-works, tallow-works, tanneries, &c., but surely Mr. Phillips would not think of attempting to close these works because the processes carried on within them are objectionable to the sense of smell. Does he believe that everything which is objectionable to the smell is injurious to health? Is it the smell from the street-gratings Mr. Phillips so strongly objects to, or is it the old exploded idea that all sewer air contains much larger quantities of disease germs than the atmosphere, and that, in consequence, it must be avoided if life is to be preserved?

Mr. Phillips has not yet stated how he would apply his system of trapping a sewer with a gradient of 1 in 600.

I am quite sure that Mr. Slagg fully believes what he asserts in his letter to Mr. Phillips, and if the gentleman referred to had been the only person who has been taken ill in the street, and died shortly after reaching home, there would be fair ground for the theory; the assertion must, however, be taken with a grain of salt, as many thousands have been taken ill in the street and have died soon after arriving home, although miles from the site of a sewer-grating. It must also be borne in mind that most diseases require some little time to develop themselves. J. W. BROWN.

West Hartlepool,
May 29th, 1888.

THE THAMES AND LONDON SEWAGE.

SIR,—Noting a reference in your journal [p. 373, *ante*] to the London sewage disposal question, I would thank you for permitting me to cite from a letter I have just received from a gentleman whom I find largely referred to in German specialist works of repute, and notably in a sewage-treatment tract I brought away with me from Germany recently, "Die Rieselfelder von Danzig." I allude to Mr. Alexander Aird (brother of Mr. John Aird, M.P.). He is an English engineer resident in Berlin, and he writes me as follows:—"I have just read your letter in the *Times*, and I may say for myself that having lived the last thirty-five years on the Continent, engaged in carrying out sanitary works, it has gradually become to me almost unbearable to observe the way in which the Metropolitan Board of Works,—although specially appointed to prevent the sewage from polluting the river,—has at an enormous expenditure shown all the world that the English are supreme in the science of 'How not to do it.'" Mr. Aird further says:—"I can assure you as a fact,—the truth of which many others as well as myself can certify,—that the disgrace attending the state of the Thames, which Lord Bramwell was compelled to allude to years ago, has well-nigh destroyed the prestige and the prospects of English engineers on the Continent. My own experience of sewage irrigation works, and a careful study of the whole question, enable me to state that Sir Robert Rawlinson's statement in his letter to you is the truth, and nothing but the truth."

I may say that the effect of the recommendations come to by Lord Bramwell's Commission has been somewhat misrendered, seeing that they (the Commissioners) did not suggest irrigation at all, but what may be termed its anti-type, namely, filtration through soil, together with the deposition of the solid flocculent matter (sludge) on the surface of low land before the liquid is discharged into the river.

Allow me to sum up with a remark from a German contemporary of yours, *Die Gesundheit:*—"Es ist nicht zu leugnen, dass in gesundheitlicher Beziehung die Städte welche Berieselung einführten, gewonnen haben."

CHARLES HANCOCK, M.A. (Oxon), F.S.S.,
Hon. Corresponding Member of the
Paris Statistical Society.

Temple, May 30.

The Student's Column.

IRON.

XXII.—SOLID BEAMS AND BEAMS WITH THICK WEBS.

IN the calculation of beams of a given section in which we introduce the known value of a modulus of rupture, certain laws, determined by experiment, can be applied in the composition of the formula to be employed, and the formula remains constant, with the exception that the modulus of rupture for the particular section we are considering must be used. The strength of a beam is found to vary inversely with its length; that is to say, a beam two units long will support twice as much as a beam four units long. Thus, as the length of a beam of given section increases, its strength diminishes in an inverse ratio. The breadth of a beam is found to influence its strength in a direct proportion; that is to say, as the breadth increases, so does the strength; and thus a beam of two units in width will have twice the strength of a beam one unit in width, so that the strength of a beam of given length and depth is directly proportional to its width. The depth of a beam exerts a much greater influence over its strength than any other of its dimensions, and hence, in designing a beam, it demands our best attention. The strength of a beam is found to vary as the square of its depth; therefore the strength of a beam of four units in depth will be in the ratio of 16 to 4, when compared with a beam of two units in depth, and hence a beam four units in depth will be four times as strong as a beam of the same length and breadth with a depth of only two units.

The above considerations show that the strength of a beam varies inversely with its length, directly with its breadth, and as the square of its depth. So that if L = length, B = breadth, and D = depth, we can express the variation in strength by the formula $\frac{B\,D^2}{L}$, and calling W = the breaking weight, and K = the modulus of rupture, we can determine the strength of any given beam by the formula

$$W = \frac{B\,D^2}{L}\,K.$$

Where this formula can be applied, it will be found more simple in its application than the use of the previous method described, and more reliable in its results.

From the foregoing remarks, we are able to draw certain conclusions which will be of great assistance in designing beams, and we can at once see that a beam so placed that its width is greater than its depth will be much weaker than if the beam were placed so that the depth is greater than its width; also that two beams placed one over the other would be weaker than if the whole depth were made of one solid beam. Thus, one rolled joist of a required depth is stronger than two rolled joists

each of half the depth placed one above the other when unconnected, but that two beams placed side by side would be equal in strength to a beam of the united width of the two. This last consideration enables us to strengthen a timber beam by inserting an iron flitch-plate without deteriorating the strength of the timber except by the bolt-holes. In the case of two rolled joists placed one above the other, and bolted together so as to form a rigid connexion, the beam is as strong as a beam of the full depth of the given section; but it is evident that the middle flanges of the united beams simply serve the purpose of a central connexion, and are otherwise a waste of material, being situated upon or near the neutral axis of the whole beam.

Books.

A Course of Lectures on Electricity, delivered before the Society of Arts by GEORGE FORBES, F.R.S., &c. London: Longmans. 1888.

Electrical Instrument-making for Amateurs: a Practical Handbook. By S. R. BOTTONE. London: Whittaker & Co. 1888.

THE study of electrical science, although demanding, in its higher branches, and in the elucidation of its more abstruse problems, the most thorough knowledge of mathematics, and the most highty trained intellectual skill, has the peculiarity that it can not only be pursued by the amateur who is ignorant of mathematics with the greatest interest, but that by an accurate and intelligent observation of the minute variations which occur in the simplest experiments, it is quite possible for the veriest tyro to collect data which may be of service in clearing up many of the difficulties which still continue to perplex those who have the most intimate acquaintance with the subject. Notwithstanding our every-day familiarity with all sorts of forms of electrical energy as manifested in the telegraph, the telephone, the incandescent lamp, and various other modern inventions, we are still only on the very threshold of our acquaintance with the arcana of the science, and to the popular mind the manner in which the enormous energy of electricity and magnetism is exerted is still so mysterious that the whole subject exercises a fascination which is lacking in the study of the other sciences. Although a large number of treatises on electricity have been published, we are not aware of any attempt,—in English, at any rate,—to present in a popular form the results of the most recent researches, and we can recommend the first-mentioned little book as, on the whole, a very successful endeavour to do this. It consists of the substance of five lectures delivered by Mr. Forbes at the Society of Arts, with one delivered in America, and we have rarely seen the principles of electrical science more clearly explained for the benefit of those who take an intelligent interest in its progress. The first lecture is on potential and electro-motive force, and it is pointed out with great force and clearness that the electrical energy which is rendered visible, for example, when a glass rod is rubbed by a piece of silk, does not exist on the surface of the electrified bodies, but in the *strained medium*, whatever it may be, occupying the space between them, and that in this space electro-motive force can be generated, which "moves, or tends to move, a positive electrification in one direction, and a negative electrification in the opposite direction in a conductor; this re-arrangement of the electrification being called electric induction." If this principle be once clearly grasped, it will render comparatively easy an understanding of the practical application of electricity to dynamo machines, telephones, &c. The following lectures are upon "Current and Resistance"; "Magnetism," in which the significance of the observed facts supporting the molecular theory is strongly insisted upon; "Electro Magnetism," and "Electro-Magnetic Induction"; the final lecture being on "Dynamo-Electric Machinery." The book is excellently got up, and the illustrations of the experiments are admirable.

The necessity for a considerable variety of apparatus is the principal difficulty which lies in the way of many a student of electrical phenomena, as the cost of such apparatus is considerable, and the Handbook on Electrical Instrument-making will be found a most useful help to those amateurs who would be only too glad to carry on these investigations, but have not the means to spend large sums in the purchase of the necessary instruments. Every kind of operation, from the elementary one of soldering to winding the cores and armature of a dynamo machine, is described in simple language, as well as the cheapest and readiest way of preparing the materials required, and a number of illustrative diagrams are given, upon which it is evident considerable trouble has been expended in order to make them fairly explanatory. We cannot, however, avoid a feeling of the utter inadequacy of both descriptions and diagrams as compared with practical illustrations in a workshop, and we can very well believe that those who are unable to obtain the latter will make many failures in endeavouring to carry out Mr. Bottone's directions; but we are equally certain that any student who tries to make his own apparatus from the description given in this handbook, even if he fail several times, will learn more and gain a deeper knowledge of his subject by his failures than if he merely purchases a ready-made instrument and experiments with it. With reference to storage batteries or accumulators, which have practically solved the problem of general lighting by incandescence, we must demur to the remark that the Planté accumulator has not yet been surpassed for efficiency.

Redress by Arbitration: a Digest of the Law relating to Arbitrations and Awards. By H. F. LYNCH. London: Effingham Wilson & Co. 1888.

THIS handy little volume, of some seventy-five pages, is intended by its author to serve as a pocket manual for arbitrators, as well as an elementary text-book for law students. How far the work will answer the requirements of the latter class of readers we leave to other hands; but, with regard to the former class, we think it may prove serviceable to those who find themselves, without any previous training, suddenly called upon to exercise judicial functions. The extreme brevity of the style, however, adopted by the author, tends to deprive the book of much of the practical usefulness it might otherwise have. For example, though the distinction is perhaps sufficiently pointed out in Articles 2, 37, and 62, between an appraisement or valuation and the award of an arbitrator, we fail to find, even with the assistance of the analysis of the statutes relating to arbitration given in Appendix D, any such clear explanation as would be likely to assist an arbitrator in recognising the difference in his position and duties, according as the case is one arising out of a simple agreement by the parties to refer to their own tribunal the settlement of their disputes, or is an arbitration resulting from the exercise by a judge of his statutory powers to refer an action before, during, or after trial. Again, the perusal of Article 3, partially repeated in Article 41, may prevent a person, sitting for the first time as one of two arbitrators, along with an umpire, from committing the very common error of supposing that he is, to some extent, an advocate of the party appointing him, and that the umpire alone is the judge; but we doubt whether, during the critical time when the arbitrator would most seek to rely on its pages, that is, during the progress of the inquiry before him, the information afforded by the book is not of too meagre a character to be of substantial benefit. For instance, the essential difference seems hardly adequately insisted upon between the nature of his duties, together with the evidence he should admit, according as his appointment rests for its foundation upon the fact of his being an expert, or simply because he is a disinterested person, and has no special knowledge of the matter in hand. So there seems to be an absence of any practical advice as to when an arbitrator is justified in incurring the expense of an accountant. The same remark applies to Article 66, relating to the discretion of the arbitrator as to the conduct of the proceedings; and Articles 116 to 120, relating to witnesses, for we should like to have seen here some hints as to the distinction to be drawn in excluding witnesses, between those whose evidence is required as to disputed facts, and those professional witnesses, such as architects, surveyors, and the like, called simply as experts, and whose presence, whilst the evidence as to facts is being given, often saves the delay otherwise involved in recapitulating that evidence in order to obtain their opinion.

Some of the summaries of cases introduced as illustrations of the short paragraphs setting out the principles of the law, appear to us to require re-arrangement, if not reconsideration, as, for example, the case of Round *v.* Hatton is used to illustrate, but seems rather to contradict, Article 83, relating to the power of an arbitrator to give directions as to carrying out the terms of his award.

The chapter relating to the requisites to the validity of an award contains a good deal of useful information in a small compass, and may be the means of saving some of those who peruse it from the unpleasant surprise of learning that their awards have been set aside, or that the matters in question have been remitted to them for re-determination.

Geology for All. By J. LOGAN LOBLEY, F.G.S. London: Roper & Drowley. 1888.

THE object of this work, as may be gleaned from its title, is to popularise geology. Technical terms are clearly explained, but only those in common usage are employed. We are pleased to observe the almost entire absence of fossils' names throughout, by reason of which the work will be much more acceptable to the general reader than are some other popular science publications. Its chief value, perhaps, lies in the collection of broad generalisations of the main facts of geology, which are properly permitted more space in description than are mere hypotheses, no matter how fascinating these latter might be. The practical side of the science is not neglected; the causes of the decay of the different kinds of stone, springs, water-supply, cements, mining, &c., are briefly alluded to. It is possible for any one to get a tolerably accurate idea of the outlines of geology from a careful perusal of Mr. Lobley's work, but it would be much more instructive still if a few diagrams and illustrations had been incorporated in suitable places.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

7,448, Machinery for Sawing Slate and Stone. F. de P. Winton.

The improvement which is the subject of this invention refers especially to the feed and reversing movements of the tables of the circular sawing machines used for sawing stones. The feed motion is obtained by a worm on the saw spindle working into a worm-wheel on a counter shaft, at the other end of which shaft there is another worm which works into a worm-wheel keyed on a shaft running parallel with the saw spindle. Above this shaft is another shaft having the pinion keyed thereon, which gears with the rack on the table, and gives motion thereto. Keyed on this latter pinion shaft is a gear-wheel, and on the said shaft there is also a rocking or swinging lever or arm carrying a wheel which is always in gear with the said gear-wheel keyed on the pinion shaft, but, by means of a crank or eccentric wheel on the rocking lever or arm, is also caused to gear with a wheel keyed on the second worm shaft, when the machine will be in gear for the slow-feed motion; or when the wheel on the rocking lever or arm is at the other end of its stroke, it gears with a wheel or pinion keyed on the saw spindle, and the machine is in gear for a quick reverse motion, and when the swinging arm is in the middle of its stroke, the machine is out of gear, and the table stopped.

8,140, Stair Treads, Flooring, &c. W. D. Bolun.

The stair treads, &c., which are the subject of this patent, are made from paper pulp, and into this paper pulp is introduced, while in the course of manufacture, pieces of broken emery, so that they are partly embedded in the outside or wearing surface of each block. When the slabs or blocks are pressed and toughened by the ordinary processes of manufacture, they form what are termed "mineralised blocks," and are fitted into frames of suitable patterns for use as stair treads, floors, &c. Wood, leather, or suitable fibrous substance is also employed in a similar manner and for the same purposes.

15,542, Ventilating Sewers and Drains. T. P. Worthington.

According to this invention, to gas lamps on pillars or standards are attached disinfecting chambers and automatic extractor ventilators, such extractors to be actuated by the wind and by the gas-jets, either conjointly or separately. A small disinfecting chamber is also fixed in such position that the air or sewer-gas must pass with "full way" into the shaft or column, and thus it forms a double check on the escape of any injurious gases before they are destroyed by contact with the flame.

18,032, Metallic Mantelpieces. W. J. Turl.

The mantels which are the subject of this patent are struck up or formed in sheet metal, and built in sections. The frieze is stamped up to shape in dies,

and is all in one piece throughout its length, and separate from the pilasters. The pilasters, the side facings, and the wall-plates are all made in one piece, rolled or stamped out of sheet metal, and preferably made with a fluting or set-off at the lower ends. The shelf of the mantel, which is also of a separate piece, is rolled over on its inner longitudinal margin, where it enters and engages with the wall and the other margins bent downward to give finish and strength. The whole is fastened by rivets or bolts.

596, Preventing the Rattling of Windows, Doors, Sashes, &c. C. Browett.

According to this invention, a small piece of wire is bent round into two loops or eyes at one end, and at the other, at right-angles to the position of these eyes, on the angle-piece, a small wooden bobbin is fitted, which is fixed up against the sliding-sash or door and revolves when the window is opened, the bobbin being held against the sash by the tension of the wire spring.

3,555, Improvements in Window Sashes. C. W. Barron.

In order to obviate the dangerous practice of cleaning the ordinary windows from the outside, the sash framing is, by this invention, so arranged in its casing that when the window is at rest, either drawn down or pushed up, the sash may be sloped or inverted, and the outside of the window cleaned from the interior of the room.

3,795, Incombustible Paint.—F. D. Coninck.

Asbestos pounded and pulverised to the finest degree is, by this invention mixed with other pigments for painting, and is also mixed with liquid glue as a medium for painting. It is applied with a brush in the ordinary way, and where oil painting is required the surface of the incombustible paint is afterwards gone over with the oil paints in general use.

NEW APPLICATIONS FOR PATENTS.

May 18.—7,398, R. Avenarius, Tar-oils for use as Wood-preserving Paints or Coatings.

May 19.—7,419, W. Stone and H. Turner, Cisterns, &c.—7,420, J. Tait, Inlet Horns for Water-closets, &c.

May 22.—7,502, A. Oakden and W. Sharpe, Paint-removing Stoves.—7,534, L. Buffington, Iron Buildings.

May 23.—7,573, T. Letheren, Preventing Water-pipes from Freezing and Bursting.—7,594, G. Eland, Drying and Seasoning Timber, &c., and Ventilating or Warming Apartments. &c.—7,602, W. and E. Simmons, Disinfecting Water-closets, Lavatories, &c.—7,604, W. Bois, Barrel Bolts for Doors, &c.

May 24.—7,617, J. Bardsley, Unions or Couplings for Lead-pipes.—7,618, W. Ross, Partition Brick.—7,646, M. and W. Heys, Plaster or Cement.—7,649, A. Dimmack, Sash-fasteners for Windows.

PROVISIONAL SPECIFICATIONS ACCEPTED.

3,227, F. and C. Smith, Locks and Bolts.—4,597, R. and J. Curson, Attaching Door-knobs and Spindles.—5,121, S. Jerman, Sash-fastener.—5,787, M. Bannister, Compositions, Paints, Varnishes, or Coating for Iron, Wood, Stone, &c.—5,879, T. Fisher, Enamel and other Paints or Varnishes.—6.010, R. Sutcliffe, Hinge.—6,222, W. Palmer, Eaves Gutters.—6,304, J. Townsley and B. Rushforth, Ventilating the upper Parts of Houses and other Buildings.—6,364, J. Porter and T. Langton, Chimney-pots.—6,593, R. Sayer, Wall Tanks.—6,607, W. Mather and J. Booth, Sash-fasteners.—6.629, J. Elliott, Roofing Slabs, Tiles, &c.—6,945, H. Lake, Glazier's Diamond.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

3,950, J. Inshaw, Domestic Fireplaces.—9,694, F. Stokes, Manufacture and Burning of Cement.—10,042, A. Boult, Roofs and Roofing Materials.—10,221, W. Walker, Ventitating Buildings, &c.—10,310, A. Sutherland, Service Cisterns and Valves for Water-closets, &c.—10,361, J. Phillips, Ventilation of Sewers.—10,376, C. Perrot and Others, Stove-grates.—13,528, J. Thrush, Traps for Drains, Sewers, &c.—17,981, D. and A. Burrow, White-washing, Plastering, and other Brushes.—5,339, C. Bradbury, Apparatus for Lifting Doors.—5,975, E. Berliner, Heat Radiating Mantel for Fireplaces.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

MAY 22.

By SEDGWICK, SON, & WEALL.

Watford, Carey-place—A plot of freehold land £250

MAY 23.

By MOSS & JAMESON.

Maida-vale—9, Blomfield-road, 40 years, ground-rent, £10 630
Chiswick—5 to 9, Hogarth-lane, 81 years, ground-rent £21 450

MAY 24.

By J. BAKER & SON.

Golder's Green—The freehold residence known as Grove Lodge 960

By CHURCHYARD & SLARK.

Ealing—26, Argyll-road, 90 years, ground-rent £7. 10s. 290

By G. F. CALVERT.

Gray's Inn-road—No. 280, term 26 years, ground-rent, £7 620
7, Harrison-street, 13 years, ground-rent £10. 10s. 210
Barnsbury — 32, Richmond-crescent, 62 years, ground-rent £8 ..... £520

By C. C. & T. MOORE.

Mile End—44 to 58 even, New-street, 18 years, ground-rent £21 925
46 and 48, Rutland-street, 18 years, ground-rent £5 360
St. George-in-the-East—9, William-street, 13 years, ground-rent £2. 5s. 85
Wapping—2, Sampson's-gardens, freehold 680
15, Great Hermitage-street, freehold 780
Victoria Park—1, Cawley-road, 66 years, ground-rent £6 325

By D. WATNEY & SONS.

Greenwich—59, London-street, freehold 700
5 and 7, Royal-hill, freehold 930
Builder's yard and workshops, freehold 230
Burton-crescent — 40, Hastings-street, 19 years, ground-rent £8. 8s. 215
39, Compton-street, 18 years, ground-rent £8 155
Regent's-square—2 to 8 even, Wakefield-street, 30 ground-rent £15 1,250
8 and 12, Harrison-street, 14 years, ground-rent £8. 380
16, Harrison-street, 14 years, ground-rent £23. 10s. 70
Burton-crescent—An improved ground-rent of £30, term 19 years 300
Regent's-square — An improved ground-rent of £55. 10s., term 30 years 810
Gray's Inn-road—An improved ground-rent of £34, term 12¾ years 285
An improved ground-rent of £13. 17s., term 14 years 110
Islington—An improved ground-rent of £69, term 30 years 930

By NEWBON & HARDING.

Canonbury—27, St. Mary's-road, 57 years, ground-rent £2 650
Kentish Town—22, Castle-road, 47 years, ground-rent £6 425
22 & 24, Hadley-road, 72 years, ground-rent £8.8s. 480
Upper Holloway—79, Alexander-road, 75 years, ground-rent £6. 6s. 205
Hoxton—140, New North-road, 37 years, ground-rent £6. 6s. 400
31, Rushton-street, 47 years, ground-rent £5 280
Portland-place—No. 21, term 25 years, ground-rent £224 870
13, Weymouth-mews, 25 years, ground-rent £20... 150
Bermondsey—84 to 91, George's-row, 40 years, ground-rent £21 805
5 to 17 odd, and 26 to 40 even, Butler's-place; 1 to 16, Susannah-place; and 1 to 7, Railway-cottages, 40 years, ground-rent £59 865

By ROGERS, CHAPMAN, & THOMAS.

South Kensington—4, Cromwell-place, and stabling, 68 years, ground-rent £42 3,250
30, Thurlow-place, 40 years, ground-rent £10 1,090
24, Alexander-square, 18 years, ground-rent £10. 770
21, Sydney-street, 43 years, ground-rent £5 590
Chelsea, Coulson street—An improved ground-rent of £21. 10s., term 53 years 310
Ifield-road—An improved ground-rent of £126, term 78 years, and reversion in 14 years 2,910
West Brompton, Finborough-road—An improved ground-rent of £23, term 78 years, and reversion for 14 years 535
Harcourt-terrace—An improved ground-rent of £87. 10s., term 76 years, reversion in 14 years... 2,075
South Kensington, The Grove — An improved ground-rent of £114, term 76 years, and reversion for 14 years 2,820
Bolton-gardens—An improved ground-rent of £65, term 88 years, and reversion for 14 years 1,130
Sutton, The Crescent—Ground-rent of £25, reversion in 71 years 640
Fulham-road—Ground-rent of £96, reversion in 71 years 2,650
Redcliffe-road—Ground-rent of £12, reversion in 71 years 285

MAY 25.

By Messrs. TAPLIN.

Regent's Park—38, North Bank, 24 years, ground-rent £21 850

By BAKER & SONS.

Salisbury, near—Laverstock Farm, and 157a. 0r. 34p., freehold 4,000
West Kensington, Challoner-street—Two freehold residences 3,085

By FURBER, PRICE, & FURBER.

Haverstock-hill—17, Queen's-crescent, 72 years, ground-rent £10 545
23, Queen's-crescent, 72 years, ground-rent £10 ... 530
Ground-rent of £10, reversion in 72 years 305
35, Queen's-crescent, freehold 775
Stoke Newington — 57, Rectory-road, 87 years, ground-rent £7 390
Tufnell Park—106, Lady Margaret-road, 80 years, ground-rent £8 530
Kentish Town—117, Torriano-avenue, 52 years, ground-rent £10. 10s. 255
Regent's Park—21, North Bank, 24 years, ground-rent £5. 5s. 1,800

By G. A. WILKINSON.

Peckham Rye—164 and 166, term 26 years, ground-rent £20 780
Chiswick, High-road — The freehold residence, Belmont 2,600
Clifton-gardens—Ground-rents of £16. 8s., reversion in 92 years 350
A plot of freehold land 600
116, High-road, 81 years, ground-rent £4 360
Kensington—8, Newland-terrace, the lease of, term 9 years 350

By HERRING, SON, & DAW.

Dulwich—1 to 4, Prospect-cottages, in duplicate; two cottages in Lordship-lane; and 1 and 2, Prospect-place, freehold 2,000
Islington—2, 3, and 4, Sudeley-street, 38 years, ground-rent £15 850

Iron Buildings at the Exhibitions.—Mr. J. Charlton Humphreys, referring to a paragraph which appeared in last week's issue of the *Builder* (p. 384), relative to iron buildings at the Anglo-Danish and Italian Exhibitions, writes reiterating the statements contained in his letter in the *Builder* of the 19th ult. (p. 364), which, he says, were absolutely correct in every particular. With this the correspondence on the subject must cease.

MEETINGS.

SATURDAY, JUNE 2.

Architectural Association.—Visit to Holmbury St. Mary. Members to meet in Booking-office, Charing-cross Station, at 12·45 p.m.

Edinburgh Architectural Association.—Visit to Elie and neighbourhood.

MONDAY, JUNE 4.

Society of Engineers.—Mr. C. Nicholson Lailey on "The Acton Main Drainage Works." 7·30 p.m.

TUESDAY, JUNE 5.

Glasgow Architectural Association.—Mr. A. N. Paterson on "Norman Architecture."

WEDNESDAY, JUNE 6.

British Archæological Association.—(1). Mr. Jas. Prigg on "Late Celtic Antiquities discovered at Elveden." (2). The Rev. S. M. Mayhew on "The Romans at Filey." 8 p.m.

Architectural Association.—Annual Dinner, Holborn Restaurant. 7 p.m.

Builders' Foremen and Clerks of Works' Institution.—8·30 p.m.

THURSDAY, JUNE 7.

Society of Antiquaries. — Ballot for the election of Fellows. 8·30 p.m.

Royal Archæological Institute. — (1) The Rev. E. S. Dewick on "The Discovery of a supposed Anchorite's Cell at Ongar, Essex." (2) Mr. J. Park Harrison on "Norman Masonry and Mason's Marks." 4 p.m.

SATURDAY, JUNE 9.

Association of Municipal and Sanitary Engineers and Surveyors. — Yorkshire District Meeting at York. 11 a.m., Visits to various works. 3 p.m., Meeting in the Council Chamber. Paper by Mr. E. G. Mawbey, City Surveyor, on "Municipal Work in York."

Miscellanea.

The Surveyors' Institution.—The annual dinner of this Institution was held on Monday evening last at the Holborn Restaurant. Mr. E. P. Squarey, President of the Institution occupied the chair, and among a company numbering 120 were Colonel Duncan, M.P., Mr. G. B. Bruce, President of the Institution of Civil Engineers; Mr. W. J. Beadel, M.P., Mr. E. H. Carbutt, President of the Institution of Mechanical Engineers; Mr. L. H. Isaacs, M.P., Mr. Giles, M.P., and Colonel Edis. The usual loyal toasts having been duly honoured, the chairman proposed "The Army, Navy, and Reserve Forces," which was responded to by Major-General Luard. Colonel Duncan responded for "The Houses of Parliament," The chairman then proposed "The Allied Professions," to which Mr. G. B. Bruce replied for the Institution of Civil Engineers; Mr. Markby for the Incorporated Law Society; Colonel Edis for the Royal Institute of British Architects; and Mr. E. H. Carbutt for the Institution of Mechanical Engineers. Mr. W. J. Beadel, M.P., late President, then gave "Prosperity to the Institution of Surveyors," and mentioned that the institution had now something like 1,400 members, with nearly 600 who had passed through a very severe examination, which was part of the principle and part of the practice of the Institution. He felt confident that the institution would be prosperous in the future if the younger members would only be as earnest as those who had preceded them. The institution had now an available fund of between 10,000*l.* and 11,000*l.* Other toasts, including that of "Mr. Squarey, the President," followed.

Sale of Freehold Building Land at Upton Park, E.—Messrs. E. E. Croucher & Co. submitted to auction, at the "Princess Alice," Romford-road, Forest Gate, on Monday evening last, 104 lots of freehold building land, forming the first portion of the Plashet Cottage Estate, Upton Park. There was a good attendance, and all the lots offered were sold at what were considered satisfactory prices. The residence known as Plashet Cottage was sold before the auction for 665*l.*; the shop plots realised from 45*l.* to 55*l.*, and the other plots fetched from 35*l.* to 50*l.*

Gloucester United Endowed Schools.—The plans of Messrs. Medland & Son, submitted in limited competition, have been accepted by the Governors of the Gloucester United Endowed Schools for new buildings for the Crypt Grammar Schools, to be erected at Friar's Orchard, Gloucester. The buildings will consist of assembly room, 60 ft. by 30 ft.; four class rooms, each 30 ft. by 19 ft.; little boys' class room, 31 ft. by 21 ft.; science and art room, 35 ft. by 22 ft.; chemical laboratory, 22 ft. by 19 ft.; gymnasium, 36 ft. by 25 ft.; and two fives courts.

Surveyorship, Reigate.—Mr. F. D. Clark, Assoc. M. Inst. C.E., Engineer and Town Surveyor, Market Harborough, has been appointed Borough Surveyor of Reigate. There were 148 applications for the appointment.

Sale of the Late Mr. George Godwin's West-End Properties.—On Thursday in last week Messrs. Rogers, Chapman, & Thomas submitted for sale, at the Auction Mart, by order of the executors of the late Mr. George Godwin, several lots of property situate in South Kensington, West Kensington, Fulham-road, and West Brompton, and comprising five leasehold residences in Thurlow-place, Alexander-square, Sidney-street, Cromwell-place, and Talgarth-road, West Kensington. These several properties were bid for up to 5,395*l.*, the sum of 3,450*l.* being offered for the mansion No. 6, Cromwell-place, South Kensington, which is held for an unexpired term of fifty-four years, at a ground-rent of 28*l.* per annum, but none of these properties were sold with the exception of the leasehold house in Sidney-street, held for an unexpired term of thirty-seven years, at a ground-rent of 5*l.* per annum, which realised 590*l.* The sale of the leasehold and freehold ground-rents was next proceeded with. These were forty-one in number, the leasehold portion of the property containing thirty-two lots and the freeholds nine. The annual income arising from the whole was stated to be 563*l.* 10s. The rents varied from 7*l.* 10s. to 21*l.* 10s. per annum each, one being a rental of 69*l.* per annum, secured on the mansion known as Bolton Gardens West, which was sold for 1,130*l.*, being held for an unexpired term of 88 years. All the leaseholds were stated to be held for unexpired terms of 78 years, and underleased for unexpired terms of 64 years, giving a reversion in 1952 of 14 years to the rack-rental. Twelve of the lots comprised rentals of 7*l.* 10s. per annum each, and these realised from 170*l.* to 175*l.* each. Two rentals of 9*l.* 10s. per annum were sold for 215*l.* each. Two of 11*l.* 10s. realised 270*l.* each; five of 17*l.* 10s. per annum, from 410*l.* to 420*l.* each; whilst six of 19*l.* were sold at from 460*l.* to 490*l.* each, the whole representing from 4 to 4½ per cent. on the outlay. Seven of the freehold ground-rents were sold at from 280*l.* to 320*l.* each; another freehold ground-rent of 30*l.* per annum, secured on the licensed premises known as the King's Arms, in Fulham-road, realised 865*l.*; whilst a freehold ground-rent of 22*l.* a year, secured on two business premises in Fulham-road, was sold for 600*l.* The total proceeds of the sale, exclusive of the properties bought in, was 14,345*l.*

Sale of Building Land at West Molesey.—On Saturday last Mr. Richard J. Collier offered for sale the Cherry Orchard Estate, in West Molesey. The property is freehold, and has frontages to the River Thames, to the high road from Hampton Court to Walton, and also to a private road, 35 ft. in width, which has been constructed through the centre of the estate. The number of lots submitted was seventy-three, nearly the whole of them having frontages of 20 ft., with depths varying from 120 ft. to 160 ft. The lots fronting the high road from Hampton Court to Walton were first offered, and were sold at prices varying from 32*l.* to 34*l.* each. A plot at the corner of this road, having a frontage of 35 ft., realised 54*l.* The plots fronting the River Thames were next submitted, and were also sold at prices ranging from 60*l.* to 74*l.* each. A corner tavern plot having a frontage to the river, and a depth of 113 ft., with a frontage to the new private road through the estate, was sold for 88*l.* The plots on the east and west sides of the private road were sold at from 18*l.* to 20*l.* each. The sale was a very successful one. Out of the entire number of plots submitted only six remained unsold at the close of the sale, the proceeds amounting to 2,000*l.*

Testimonial to a Schoolmaster. — A Committee of "Old Boys" has been formed for the purpose of recognising in some tangible way the services of Mr. H. C. Goodchild, who is retiring at Midsummer from the mastership of the Stockwell British Schools,—a position which he has held for forty years, having been for ten years prior to 1848 engaged in scholastic work in Paris and elsewhere, so that this is his Jubilee year as a teacher. As it is believed that many of his former scholars whose addresses are not accessible are engaged in various (some of them in responsible) capacities in the building and cognate trades, we have been asked to mention the matter, and to say that the hon. sec. to the Committee, Mr. Charles A. Terry, 58, Kay-road, Stockwell, S.W., will be glad to hear from any old scholar on the subject.

The Font and Baptistery of St. Peter Mancroft, Norwich.—On Whit Sunday the completion of the restoration of the font and baptistery in St. Peter Mancroft Church was celebrated by special dedication services. The *Norfolk Chronicle* says it is, perhaps, somewhat singular that the only carved wooden baptisteries known in England are both found in Norfolk; one is that in St. Peter Mancroft Church, the other is in Trunch Church, though it is considerably smaller, and is supported on six columns, while that in Norwich has but four. It was, therefore, a source of considerable anxiety when it was discovered that after a somewhat chequered existence of 400 years, the baptistery had suffered from decay to such an extent as to be almost unsafe. At the time of the Queen's Jubilee, Mr. W. E. Bell, of Thorpe Hamlet, determined to restore the wooden canopy, and to provide a new font, as a memorial of that event. The work has now been carried out at a cost of 300*l.*, though Mr. Bell has not lived to see its completion. The architect engaged was Mr. Frank Baggallay, of London; and the work has been executed by Mr. J. E. Knox, of Kennington. Wherever it was possible to use the original carvings or woodwork no new material has been introduced. The new font is in Corsham Bath stone, and is richly carved. The upper panels are traceried, and in the lower panels are conventional flower-forms of the fifteenth century.

Ancient Monuments.—An order in Council was published on Wednesday, dated May 3, 1888, ordering and prescribing that certain monuments shall be deemed to be ancient monuments, within the meaning of the Act of 1882. Section 10 of that Act provides that Her Majesty may, by Order in Council, declare that any monument of a like character to the monuments described in the schedule to the Act shall be deemed to be an ancient monument. The monuments now declared to be ancient are:—(1) The Nine Stones, Winterbourne Abbas, near Dorchester; (2) The Chambered Long Barrow, known as the Gray Mare and Colts, near Gorwell, in the county of Dorset; (3) the Stone Circle on Tenant-hill, Kingston Russell Farm, near Dorchester; (4) the Cup-marked Rock at Drumtroddan Farm, Mochrum; (5) the Three Standing Stones, Mochrum; (6) the Moat-hill, of Druchtag, Mochrum; (7) the semi-circular earthwork on the sea cliff, Barsalloch, Mochrum; and (8) the ancient chapel at the Isle of Whithorn. These last five monuments are in the county of Wigtown. The Order will not come into force until it has lain for 40 days before both Houses of Parliament during the Session.—*Times*.

The Registration of Plumbers.—At the meeting of delegates, just terminated at Sheffield, of the Operative Plumbers' Association of Great Britain and Ireland (ninety-seven of the chief towns of the kingdom being represented), the following resolution, moved by Mr. R. J. Lyne, delegate (Kensington Lodge), London, seconded by Mr. T. Anderton, delegate, Liverpool, "That this Delegate Meeting, having fully considered the system of Registration of qualified Plumbers, established by the Worshipful Company of Plumbers, London, deem it worthy of adoption by the Association as a measure necessary in the interests of the trade and the public, and desire that the Executive Council do take steps to promote the extension of the system throughout Great Britain and Ireland, appointing representatives of the Association to act in the matter," was supported by delegates from England, Ireland, Scotland and Wales, and carried. The expression of opinion embodied in this resolution is likely to go far to promote the general adoption of the Registration system.

PRICES CURRENT OF MATERIALS.

TIMBER.	£.	s.	d.	£.	s.	d.
Greenheart, B.G. ....ton	6	10	0	7	10	0
Teak, E.I. ....load	8	0	0	12	10	0
Sequoia, U.S. ....foot cube	0	2	3	0	3	0
Birch, Canada ....load	2	15	0	4	15	0
Fir, Dantsic, &c.	2	0	0	4	0	0
Oak ,, ...	2	0	0	4	10	0
Canada	4	0	0	6	10	0
Pine, Canada red	2	10	0	3	10	0
,, yellow	2	10	0	4	0	0
Lath, Dantsic ....fathom	3	10	0	5	0	0
St. Petersburg	5	0	0	6	0	0
Wainscot, Odessa, crown	2	10	0	3	0	0
Deals, Finland, 2nd and 1st ...std.	8	0	0	9	10	0
,, 4th and 3rd	6	10	0	7	10	0
Riga	6	0	0	7	10	0
St. Petersburg, 1st yellow	9	10	0	14	10	0
,, 2nd ,, ...	8	0	0	9	0	0
,, white	7	0	0	10	0	0
Swedish	7	0	0	15	10	0
TIMBER (*continued*).						
White Sea	8	0	0	17	0	0
Canada, Pine, 1st	14	0	0	23	0	0
,, ,, 2nd	9	0	0	15	0	0
,, ,, 3rd, &c.	7	6	0	9	10	0
,, Spruce, 1st	8	0	0	9	10	0
,, 3rd and 2nd	6	0	0	7	10	0
New Brunswick, &c.	6	0	0	7	5	0
Battens, all kinds	4	10	0	11	0	0
Flooring Boards, sq., 1 in., prepared, First	0	10	0	0	12	0
Second	0	7	0	0	9	6
Other qualities	0	4	6	0	6	6
Cedar, Cuba....foot	0	0	3½	0	0	4
Honduras, &c....	0	0	3½	0	0	3½
Australian	0	0	2½	0	0	3½
Mahogany, Cuba	0	0	4½	0	0	6
St. Domingo, cargo average	0	0	4½	0	0	6
Mexican ,, ...	0	0	4	0	0	4½
Tobasco ,, ...	0	0	4½	0	0	5½
Honduras ,, ...	0	0	4½	0	0	5½
Rose, Rio ....ton	8	0	0	11	0	0
Box, Turkey	5	0	0	12	0	0
Walnut, Italian ....foot	0	0	4	0	0	5½
METALS.						
IRON—Bar, Welsh, in London...ton	4	17	6	5	0	0
,, ,, at works in Wales ...	4	7	6	4	10	0
,, Staffordshire, London....	5	5	0	7	0	0
COPPER—						
British, cake and ingot.... ton	78	0	0	81	0	0
Best selected	79	0	0	82	0	0
Sheets, strong	88	0	0	0	0	0
Chili, bars	81	0	0	81	10	0
YELLOW METAL....lb.	0	0	7¼	0	0	7½
LEAD—						
Pig, Spanish ....ton	12	5	0	12	7	6
English, common brands	12	10	0	12	12	6
Sheet, English....	13	10	0	13	12	6
SPELTER—						
Silesian, special ....ton	16	15	0	17	0	0
Ordinary brands....	16	10	0	16	15	0
TIN—						
Straits....ton	86	0	0	0	0	0
Australian	86	0	0	0	0	0
English Ingots....	95	0	0	0	0	0
ZINC—						
English sheet....ton	21	0	0	21	10	0
OILS.						
Linseed ....ton	18	10	0	18	12	6
Cocoanut, Cochin	26	0	0	26	10	0
Ceylon	23	0	0	23	10	0
Palm, Lagos	20	0	0	20	10	0
Rapeseed, English pale	24	10	0	0	0	0
,, brown	23	0	0	0	0	0
Cottonseed, refined	20	15	0	0	0	0
Tallow and Oleine	25	0	0	45	0	0
Lubricating, U.S.	5	15	0	6	0	0
,, refined	7	0	0	12	0	0
TURPENTINE...						
American, in casks....cwt.	1	9	0	0	0	0
TAR—						
Stockholm ....barrel	0	15	9	0	0	0
Archangel	0	9	6	0	0	0

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *Noon on Thursdays.*]

BIRMINGHAM.—For the erection of house, Stratford road. Messrs. J. P. Sharp & Co., architects, 46, Cherry-street, Birmingham:—

W. & J. Webb	£1,328 0 0
G. Gill	1,280 0 0
C. Giles	1,198 0 0
S. Taylor	1,195 0 0
H. Wilcox	1,170 0 0
J. Webb	1,149 0 0
W. Cowper	1,098 0 0
F. Davis	1,065 0 0

BIRMINGHAM.—For the erection of house, Oxford road, Moseley. Messrs. J. P. Sharp & Co., architects:—

W. & J. Webb	£1,090 0 0
G. Gill	1,080 0 0
Harding & Huxley	1,045 0 0
C. Giles	1,010 0 0
W. Cowper	986 0 0
J. H. Blackham	985 0 0
H. Wilcox	975 0 0
F. Davis	960 0 0
J. Jones	957 10 0
B. Whitehouse	939 0 0
J. Webb	920 0 0

BLOOMSBURY. — For the erection of ladies' residential chambers, Chenies-street, W. Mr. J. M. Brydon, architect. Quantities by Messrs. Franklin & Andrews:—

Bray & Pope	£11,796 0 0
Robt. Perkins	9,975 0 0
Chas. Jarrett	9,585 0 0
Perry & Co.	9,459 0 0
Higgs & Hill	9,384 0 0
Alfred Bush	9,365 0 0
Patman & Fotheringham	9,363 0 0
Holland & Hannen	9,336 0 0
J. T. Chappell	8,726 0 0
Brass & Son*	8,473 0 0

* Accepted, as amended, at £7,500.

BOW.—For general repairs and painting at premises, 186, Bow-road, for Mr. J. Colvill. Mr. James F. Wesley, architect, Forest Gate:—

W. & J. Fenwick	£180 0 0
A. & A. Emmott	165 0 0
G. Baney	145 0 0
E. Alexander (accepted)	139 12 0
E. Palmer (too late)	135 0 0

CANNOCK. — For the erection and completion of "Barracks" buildings, for the "Salvation Army," in Cannock. Quantities by the architect, Mr. E. J. Sherwood, 101, Queen Victoria-street, London, E.C.:—

Dorse & Son, Cradley Heath	£1,340 0 0
P. H. Dawes, Westminster	1,029 0 0
J. Light, Oldbury	889 10 0
C. Linford, Cannock	886 16 0
T. Mason, Hednesford	823 10 0
J. Doughty, Cannock	800 0 0
W. Ingram, Cannock	798 0 0
F. J. Coxhead, Leytonstone	749 0 0
Weale & Co., Ludlow	686 0 0

CONTRACTS AND PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Sewering and Making-up Roads	Hendon Local Board	S. S. Grimley	June 4th	xi.
Making-up and Paving Road	Wandsworth Bd. of Wks	*Official*	June 5th	xi.
Raquet Court and Gymnasium, Hammersmith	St. Paul's Schools	A. Waterhouse	do.	xiii.
Cleansing and Watering	Bristol U. S. A.	*Official*	June 6th	xi.
Laying Kent Ragstone Tar-Paving	Hove Commissioners	do.	do.	xiii.
Painting Works, Cavalry Barracks, Brighton	War Department	do.	do.	ii.
Erection of a Boundary Wall	Fulham Union	G. Saunders	June 7th	xiii.
Painting Works	Met. Asylums Board	*Official*	do.	xi.
Supply of Materials	Cor. of London	do.	June 8th	xiii.
Repairing, &c., Wandsworth Bridge	Met. Board of Works	do.	do.	ii.
Repairing Carriageway, Waterloo Bridge	do.	do.	do.	ii.
Rebuilding Bridge, &c.	County of Westmoreland	J. Bentley	June 9th	ii.
Cast-Iron Cylinders	Co-op. Wholesale Society	J. Thompson	June 10th	xiii.
Sinking of Cast-Iron Cylinders, &c.	do.	do.	do.	xiii.
Cast-Iron Pipes, &c.	Mountain Ash Local Bd.	J. Mansergh	June 11th	xiii.
Alteration, &c., to Brecon Town-hall	The Committee	*Official*	do.	xiii.
Road Materials	Lewisham Board of Wks	do.	June 12th	xiii.
Steam Fire-Engine, Hose-Cart, &c.	Borough of West Ham	Lewis Angell	do.	ii.
W.C., Projections, &c.	Whitechapel Union	Bruce J. Capell	do.	xi.
Six Cottages at Goring Station	Gt. Western Railway Co.	*Official*	do.	ii.
Engine and Boiler Houses, &c.	St. Helen's Corporation	D. M. F. Gaskin	do.	xi.
Hotel	.....	E. Bush	June 16th	xiii.
Painting Works, Winchester Barracks	War Department	*Official*	Not stated	ii.
Factory	Day & Martin	G. Bower	do.	xi.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Highway Inspector	Cheltenham Town Cncl.	200*l.*, &c.	June 8th	xvi.
Surveyor and Inspector of Nuisances	Ely Local Bd. of Health	120*l.*	June 14th	xvi.
Clerk of Works	Tottenham School Bd.	3*l.* 10s. per week	June 18th	xvi.

CHISWICK.—For completing No. 58, Woodstock-road, Bedford Park, for the Gresham Company. Mr. Richard Creed, architect, Finsbury-square, E.C. :—

The Stores	£242 0 0
Johnson	210 0 0
Powell	208 0 0
Bryant (accepted)	199 0 0

CHISWICK.—For completing No. 60, Woodstock-road, Bedford Park, for the Gresham Company. Mr. Richard Creed, architect :—

The Stores	£256 0 0
Powell	208 0 0
Johnson	207 0 0
Bryant (accepted)	202 0 0

CLAPHAM JUNCTION. — For new premises, for Messrs. Francis. Mr. R. Cruwys, architect :—

Greenwood	£8,460 0 0
Gregory	8,287 0 0
Dickinson	8,060 0 0
Turtle & Appleton	7,880 0 0
H. Beveman & Sons	7,777 0 0
Macey	7,767 0 0
Candler	7,650 0 0
Nightingale	7,583 0 0
Holloway	7,533 0 0
Holliday & Greenwood	7,477 0 0
Higgs	7,320 0 0
Balaam	7,000 0 0
Rodwell	6,950 0 0
Kynoch (accepted)	6,670 0 0

CROYDON. — For alterations to boiler-house, &c., Croydon Union Workhouse. Mr. Fred West, architect :—

Tidy, Croydon	£545 0 0
Bryan, Norwood	545 0 0
Berridge, Norwood	530 0 0
Okenden, Anerley	499 0 0
Smith & Bulled, Croydon	495 0 0
King Bros. & Co., Norwood	469 0 0
Caplen & Redgreave, Croydon	447 0 0
J. O. Richardson, Albert Works, Peckham	405 0 0

DOUGLAS (I.M.).—For erecting Board schools at Douglas, I.M., to accommodate 880 children, for the Douglas School Committee. Messrs. Alex. Bleakley, jun., A.R.I.B.A., and Thomas W. Cubbon, joint architects, Birkenhead and Douglas :—

Wm. Kelly, The Bridge, Douglas*	£4,679 0 0

* Accepted.

FOREST GATE.—For erecting stabling in rear of premises adjoining the Princess Alice public-house, Romford-road, for Mr. C. J. Knowler. Mr. James F. Wesley, architect, Forest Gate. Quantities supplied :—

W. Watson, Ilford (accepted)	£306 6 0

FOREST GATE.—For fitting up the Model Bakery, 303A, Romford-road, for Mr. J. F. Andrews. Mr. James F. Wesley, architect, Romford-road, Forest Gate :—

J. Baker & Sons, City-road (accepted)	£315 0 0

FOREST GATE.—For fitting up butcher's shop, 299, Romford-road, for Mr. T. G. Holttum. Mr. James F. Wesley, architect, Forest Gate. Quantities supplied :—

Bishop & Webb	£146 0 6
Watson	146 0 0
W. & J. Fenwick (accepted)	135 15 5

FOREST GATE.—For painting and decorating the Princess Alice public-house, Romford-road. Mr. James F. Wesley, architect, Forest Gate :—

G. Baney	£183 5 0
W. & J. Fenwick (accepted)	160 0 0

HACKNEY.—For alterations at the Cat and Mutton Tavern, London-fields, Hackney, and building stabling adjoining. Mr. R. A. Lewcock, architect, 88, Bishopsgate-street Within, E.C. :—

Goodall	£2,466 0 0
Anley	2,430 0 0
Ivory	2,415 0 0
Steel Bros.	2,350 0 0
Hughes	2,003 0 0
Stephenson	1,845 0 0
Higgs	1,837 0 0
Spencer & Co.	1,825 0 0
Gasfittings.	
W. Winn (accepted)	£157 6 6
Pewtering and Counter.	
T. Heath (accepted)	£251 0 0

HAMPTON WICK.—For the erection of villa residence on the Elms Park Estate, Hampton Wick, for Mr. A. C. Simon. Mr. Ernest H. Abbott, 6, Warwick-court, High Holborn, architect :—

Harris (accepted)	£1,074 0 0

HAMPTON WICK.—For the erection of boat-house to The Elms, Hampton Wick, for Mr. F. Jacob. Mr. Ernest H. Abbott, architect :—

Peddle	£119 0 0
Harris	112 0 0
Hobern Bros.	112 0 0
Constable (accepted)	110 0 0

HIGHGATE.—For the erection and completion of a house at Shepherd's-hill, Highgate, for Mr. H. Kenneth. Mr. E. J. Paine, architect. Quantities supplied :—

Patman & Fotheringham	£3,250 0 0
Woodward	3,236 0 0
Williams & Son	3,180 0 0
Atherton & Latta	3,088 0 0
F. & H. F. Higgs	3,076 0 0
J. Holloway	3,025 0 0
Stimpson & Co.	3,000 0 0
Harris & Wardrop	2,962 0 0
J. O. Richardson, Albert Works, Peckham	2,829 0 0

LEE (Kent).—For the erection of dwelling-house at Lee-green, S.E., for Mr. Ernest Lindley :—

Kennard Bros., Lewisham (accepted)	£1,350 0 0

LEE (Kent).—For the alteration and enlargement of premises at Lee-green, for the Home-Made Bread Company :—

Kennard Bros., Lewisham (accepted)	£450 0 0

LONDON.—For rebuilding Nos. 14 and 15, James-street, Old-street, for Mr. Leonard Marshall. Mr. Chas. H. Flack, architect :—

First portion of Contract.	
Grover & Co.	£1,430 0 0
Downs & Co.	1,398 0 0
Patman & Fotheringham	1,383 0 0
Balaam Bros.	1,345 0 0
Sabey & Co.	1,337 0 0
Scrivener & Co.	1,303 0 0
Greenwood & Co.	1,297 0 0
Exton & Burton	1,250 0 0

LONDON. — For pulling down and rebuilding the Britannia beerhouse, Lyte-street, Bethnal Green, for the Commercial Brewery Company. Mr. G. Lamb, architect, Queen's-road, Barking :—

Turnbull & Son	£711 13 0
S. W. Hawkings	648 0 0
Sherwood	589 0 0
Owen Scotney	493 0 0
J. Higgs	387 0 0

LONDON.—For drainage and other works at 54, Inverness-terrace, W., for Miss La Corte. Messrs. Brown & Pritchett, architects :—

Toten & Sons	£175 0 0
Jolliffe, Notting Hill (accepted)	155 0 0

LONDON.—For the erection of a glass bottle manufactory, at Highbury, for Mr. G. Bellchambers. Mr. Alfred Burr, 10A, Queen-square, Bloomsbury, architect :—

Brown & Harris	£3,876 0 0
W. E. Haydon	3,775 0 0
E. Hughes	3,679 0 0
J. J. Rayment	3,650 0 0
Grover & Son	3,492 0 0
Banks & Salmon	3,350 0 0
J. Milroy	3,292 0 0
Scrivener & Co.	3,262 0 0

LONDON.—For repairs, painting, papering, &c., at the Winstanley-road Board Schools, Clapham, for the School Board for London. Mr. Thomas J. Bailey, architect :—

C. J. Shaw	£150 0 0
W. G. Lilly	139 0 0
E. Flood	136 0 0
Whitehead & Co.	131 0 0
W. Hammond	123 0 0
W. Johnson	118 0 0
A. Martin	113 0 0
H. Walkley	112 0 0
F. R. Turtle	106 0 0
M. McCarthy	98 0 0
G. R. Earsdon	97 0 0
G. Foxley, King-street, Regent-street*	95 0 0

* Accepted.

LONDON.—For sundry repairs, painting, distempering, &c., at the Effra Parade Board Schools, Brixton, for the School Board for London. Mr. Thomas J. Bailey, architect :—

W. G. Legiott	£310 0 0 !
Ellis & Hoare	205 12 9
Whitehead & Co.	191 0 0
J. W. Roy	175 0 0
George Foxley	155 0 0
R. Eddie	152 0 0
A. Martin	145 0 0
W. G. Lilly	144 0 0
G. R. Earsdon	142 0 0
M. McCarthy	117 0 0
H. Walkley	88 0 0 !

LONDON.—For the erection of new church, club-room, &c., at Old Nicol-street, E., for the Parish of Holy Trinity, Bethnal Green. Mr. Richard J. Lovell, architect, 1, Finsbury-circus. Quantities by Mr. James Kennedy, 31, Great James-street, Bedford-row :—

Clark & Bracey	£3,383 0 0
Ivory	3,365 0 0
J. & J. Greenwood	3,348 0 0
L. H. & R. Roberts	3,289 0 0
Patman & Fotheringham	3,255 0 0
Perry & Co. (accepted)	2,988 0 0

LONDON.—For alterations, &c., to the Norfolk Arms, 288, Strand. Mr. Richard J. Lovell, architect, 1, Finsbury-circus, E.C. :—

Bar, Pewterer's Work, &c.	
Hayworth & Son	£328 0 0
D. Brown & Co.	295 0 0
Sanders & Sons, Holborn	230 6 6
Ivory (accepted)	217 10 0
Staircase, &c.	
Stephenson	£63 0 0
Sanders & Sons, Holborn	55 10 0
Ivory (accepted)	48 0 0

LONDON. — For alterations at the workhouse and infirmary, and for repairs, cleansing, distempering, &c., at the casual wards, of the parish of St. George-in-the-East, Old Gravel-lane, for the Guardians of the Poor. Messrs. Wilson, Son, & Aldwinckle, 2, East India-avenue, Leadenhall-street, E.C., architects :—

	Alterations.	Casual Wards.
J. Mills	£519	£312
C. Cox	494	297
J. Holland	439*	275*

* Accepted.

NORTH TAWTON. — For additions to the woollen factory. Mr. Keenor, architect, Winkleigh, Devon :—

Sundry Works.

S. Ellis (accepted), about £2,000.

NORWOOD.—For new probation and isolation wards at Norwood Schools, for the Lambeth Board of Guardians. Mr. Sidney R. J. Smith, A.R.I.B.A., architect, 15, York-buildings, W.C. :—

Caplen & Redgrave, Croydon	£10,043 0 0
W. Smith	8,695 0 0
W. Watson, Ascot	8,569 0 0
Ward, Clark, & Co.	8,502 0 0
Wm. Downs	8,240 0 0
J. & C. Bowyer	8,175 0 0
J. Tyerman	8,101 0 0
T. Martin, Maidenhead	7,856 0 0
F. & H. F. Higgs	7,810 0 0
A. M. Deacon & Co.	7,798 0 0
J. Shillitoe & Sons, Bury St. Edmunds	7,760 0 0
W. Brass	7,735 0 0
Henry Hart	7,620 0 0
J. Longley, Crawley	7,618 0 0
Kirk & Randall	7,544 0 0
Holloway Bros.	7,513 0 0
J. T. Chappell	7,437 0 0
Castle	7,392 0 0
King Bros. & Co.	7,388 0 0
J. O. Richardson (accepted)	7,178 0 0

PLASHET.—For painting and repairs at the Industrial Schools, for the Guardians of the Poor of the Parish of St. George-in-the-East. Messrs. Wilson, Son, & Aldwinckle, 2, East India-avenue, Leadenhall-street, E.C., architects :—

J. Mills	£350 0 0
J. Holland (accepted)	322 0 0
W. Watson	319 0 0
M. McCarthy	317 0 0

SHORTLANDS (Kent).—For the erection of stabling and conservatory in May's Hill-road, Shortlands, Kent. Messrs. Brunsden & Henderson, architects, 3, Barbican, E.C. Quantities by Mr. E. J. Sadgrove, 30, Fleming-road, S.E. :—

	Stables.	Conservatory.
G. W. Drysdale, Edgware-road	£1,001	£247
W. R. Williams, Putney	997	250
F. Cooper, Beckenham	929	211
F. Saunders, Oxford-street	869	215
T. Boyden, King's Cross	830	220

SHREWSBURY.—For the erection of an eighty-quarter malthouse, boundary-walls, and fences, at Shrewsbury, for Messrs. W. Jones & Son. Messrs. H. Stopes & Co., architects, 24A, Southwark-street, London, S.E. :—

	Malthouse.	Boundary walls, &c.
Treasure & Son, Shrewsbury	£5,753 6 0	£222 10 0
Oliver Jones, Shrewsbury	5,700 0 0	223 0 0
Henry Farmer, Shrewsbury	5,600 0 0	195 0 0
John Groves, Shrewsbury	5,575 0 0	189 0 0
Thomas Morris, Shrewsbury	5,514 0 0	185 0 0
Henry Lovatt, Wolverhampton	5,462 0 0	193 0 0
Richard Price, Shrewsbury	5,310 0 0	194 0 0
J. Gethin, Shrewsbury*	4,985 0 0	215 0 0

* Accepted subject to certain omissions.

SOUTHWARK. — For the erection of warehouse in Blackman-street, Borough, for Messrs. Jacobs & Young, Mr. Ellis Marsland, architect. Quantities by Messrs. Young & Brown :—

H. & L. Roberts	£2,798 0 0
C. Robson	2,687 0 0
L. Whitehead & Co.	2,625 0 0
J. T. Chappell	2,539 0 0
J. Bullers	2,500 0 0
W. & H. Castle	2,490 0 0
J. Hoare & Son	2,483 0 0
J. Tyerman	2,429 0 0
T. Rider & Son	2,420 0 0
J. & J. Greenwood	2,397 0 0
M. Marsland	2,355 0 0
W. Downs	2,343 0 0
Hy. Potter	2,299 0 0
J. O. Richardson	2,258 0 0
W. M. Dabbs	2,249 0 0
H. L. Holloway	2,229 0 0
Leeks & Hooker	2,197 0 0
Brown, Son, & Co.	2,190 0 0
W. & B. Bardell	2,025 0 0

STAINES.—For the erection of new house at Rosefield, Staines, for Mr. F. Barrett. Mr. T. H. Nixon, architect. Quantities not supplied :—

Simpson & Gardam, Egham	£1,896 0 0
G. Reavell, Staines	1,875 0 0
J. T. Chappell, London	1,810 0 0
G. Gray, Egham	1,792 0 0
Hutt & Satchwell, Richmond	1,640 0 0
J. Wheatley & Sons, East Molesey	1,620 0 0

SURBITON.—For erecting the Surbiton Assembly-rooms. Mr. Alfred Mason, architect, Kingston-on-Thames :—

John Palmer, Weston-super-Mare	£5,752 0 0
C. E. Ackermann, Wimbledon	5,282 0 0
S. T. Harvey, London	4,975 0 0
J. Wheatley & Sons, East Molesey	4,934 0 0
Oldridge & Sons, Norbiton	4,898 0 0
Scharien & Co., South Kensington	4,896 0 0
Adkins Bros., Surbiton	4,890 0 0
Kemp, Aldershot	4,880 0 0
Ingram, Woking	4,874 0 0
W. & F. Croaker, London	4,786 0 0
Henley & Co., Norwood	4,735 0 0
J. Crook & Sons, Southampton	4,543 0 0
T. Martin, Maidenhead	4,500 0 0
C. & T. Adkins, Surbiton	4,493 0 0
J. Shillitoe & Sons, Bury St. Edmunds	4,448 0 0
J. Piller, Teddington	4,200 0 0
J. & F. Collinson, Teddington*	4,100 0 0

* Accepted.

WARE.—For sundry repairs, decorations, and sanitary works at Canons, Ware, for Mr. B. C. Berkeley, under the superintendence of Mr. Frederick Colyer, architect, 18, Great George-street, Westminster, S.W. :—

Builder's and Decorative Work.

F. Hitch, Ware	£415 0 0
Stanley Bird, London	372 0 0

Sanitary Work.

G. Jennings	321 0 0

Sundry Extra Work.

G. Jennings	125 0 0

WATFORD (Herts).—For pulling down Nos. 74 and 76, High-street, and erecting new house, shop, and slaughter-house, for Mr. Francis Fisher. Mr. C. P. Ayres, architect, Watford :—

Brightman	£2,699 0 0
Judge & Eames	2,687 0 0
Andrews & Son	2,678 0 0
H. M. Dove	2,575 0 0
T. Turner (Limited)	2,449 0 0
W. B. Neal	2,397 0 0
G. & J. Waterman (accepted)	2,337 0 0

WEST HAM. — For extending the Clarkson-street schools, for the West Ham School Board. Mr. J. T. Newman, F.R.I.B.A., architect, 2, Fen-court, Fenchurch-street, E.C. Quantities by Messrs. R. L. Curtis & Sons :—

G. J. Hoskings	£1,240 0 0
W. J. Maddison	1,225 0 0
J. Morter	1,210 0 0
Norton & Son	1,190 0 0
J. Catley	1,169 0 0
B. E. Nightingale	1,165 0 0
Hearle & Son	1,093 0 0
North Bros.*	1,066 0 0

* Accepted subject to approval of Education Department.

WESTMINSTER.—For connecting the dwelling-houses and shops, Nos. 86, 87, 88, 89, and 90, York-street, and altering them into residential chambers, for Mr. H. Kimber, M.P. Messrs. Brown & Pritchett, architects :—
J. Watts, Belsize (accepted at schedule of prices).

WHITEWELL BOTTOM (near Manchester). — For erecting Board schools at Whitewell Bottom, to accommodate about 280 children, for the Newchurch-in-Rossendale School Board. Mr. Thomas W. Cubbon, 51, Hamilton-square, Birkenhead, architect. Quantities by the architect :—

Accepted tenders.

Wm. Coupe, Newchurch, excavator, bricklayer, and mason	£1,220 0 0
Robt. Whittaker, Whitewell Bottom, carpenter and joiner	438 10 0
Henry Tomlinson, Rawtenstall, slater and plasterer	232 0 0
R. Clegg, Bacup, plumber, painter, and glazier	159 0 0

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office, 19s. per annum (or 4s. 9d. per quarter), can ensure receiving "The Builder" by *Friday Morning's post*.

TO CORRESPONDENTS.

***Registered Telegraphic Address*, "THE BUILDER, LONDON."**

W. N.—T. G. J.—T. R. S.—J. B. (should send amounts).—W. H. B. (ditto).—C. H. F. (ditto).—W. T. F., and E. C. (lists came too late for this week).—P. E. P.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

FIRE BRICKS.

STOURBRIDGE BEST FIRE BRICKS, 80s. *M.*
Ditto FIRE CLAY, 25s. a ton.
Also in Stock: Fire Lumps, Fire Tiles, Boiler Seatings, and Flue Covers.
R. CULL & SON, Manufacturers,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower Hill, E.C.
City Office: — 72, Palmerston-buildings, Old Broad-street, E.C.

GLAZED BRICKS.

Best quality—White
Headers at 9*l.* 5s. *M.*
Stretchers at 10*l.* 5s. *M.* Quoins and Bullnose at 11*l.* 15s. *M.*
R. CULL & SON,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower Hill, E.C.
City Office: — 72, Palmerston-buildings, Old Broad-street, E.C.

BLUE BRICKS.

Common Blue Bricks at 55s. *M.* Best Pressed Blue Facings at 65s. *M.* Bullnose and Stable Pavings at 70s. *M.*
Plinths, Copings, Channels, &c. in Stock.
R. CULL & SON,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower-hill, E.C.
City Office: — 72, Palmerston-buildings, Old Broad-street, E.C.

DRAIN PIPES.

4-inch. 3d. 6-inch. 4d. 9-inch. 7d. 12-inch. 11d. per ft.
Subject to a large discount for railway truck loads.
Bends, Junctions, Syphons, Gullies, &c. Kitchen Sinks, Closet Pans, &c. in Stock.
R. CULL & SON,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower-hill, E.C.
City Office: — 72, Palmerston-buildings, Old Broad-street, E.C.

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum PREPAID. To all parts of Europe, America, Australia, and New Zealand, 26s. per annum. To India, China, Ceylon, &c. 30s. per annum. Remittances payable to DOUGLAS FOURDRINIER, Publisher, No. 46, Catherine-street, W.C.

Best Bath Stone.

CORSHAM DOWN. | FARLEIGH DOWN.
BOX GROUND. | COMBE DOWN.
WESTWOOD GROUND. | STOKE GROUND.

The BATH STONE FIRMS, Limited.
HEAD OFFICES: BATH.

DOULTING FREESTONE.

THE CHELYNCH STONE. The stone from these quarries is known as the "Weather Beds," and is of a very crystalline nature, and undoubtedly one of the most durable stones in England.

THE BRAMBLEDITCH STONE. Is of the same crystalline nature as the Chelynch Stone, but finer in texture, and more suitable for fine moulded work.

Prices, and every information given, on application to CHARLES TRASK & SONS, Doulting, Shepton Mallet.

London Agent—Mr. E. A. WILLIAMS, 16, Craven-street, Strand, W.C. [ADVT.

HAM HILL STONE.

Greater facilities have been provided for working these quarries, and the stone can be supplied in large quantities at short notice.

Prices, and every information given, on application to the HAM HILL STONE CO., Norton, Stoke-under-Ham, Somerset.

London Agent—Mr. E. A. WILLIAMS, 16, Craven-street, Strand, W.C. [ADVT.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds, and milk-rooms, graneries, tun-rooms, and terraces. [ADVT.

Asphalte.
Seyssel, Patent Metallic Lava, and White Asphaltes.
M. STODART & CO.,
Office:
No. 90, Cannon-street, E.C. [ADVT.

SPRAGUE & CO.'S
INK-PHOTO PROCESS,
22, Martin's-lane,
Cannon-street, E.C. [ADVT.

Garside's Noted Bedfordshire Coarse and Fine Silver Sand.—Is perfectly free from impurity, and the best and cheapest in the market. All qualities in stock, for every purpose required in the building trade, for filtration, or for nursery purposes. All pure grit!
Apply to
GEORGE GARSIDE, JUNR.,
Leighton Buzzard. [ADVT.

W. H. Lascelles & Co.
121, Bunhill-row, London, E.C.
HIGH-CLASS JOINERY,
LASCELLES' CONCRETE,
CONSERVATORIES AND GREENHOUSES.
Estimates given on Application.

HOBBS, HART, & CO., Limited,

MAKERS TO HER MAJESTY BY SPECIAL APPOINTMENT.
The Bank of England and its Branches, including New Law Courts Branch, now building.

PATENT PROTECTOR AND LEVER LOCKS, for all Purposes.

STEEL SAFES, STRONG-ROOM & PARTY-WALL DOORS.

SELF-CLOSING DOORS, FOR THEATRES AND PUBLIC BUILDINGS,
As approved by the Metropolitan Board of Works (used in large numbers at Covent Garden Theatre).

IMPORTANT COMMUNICATION.—FIRE AT WHITELEY'S.

WILLIAM WHITELEY, Westbourne Grove,
London, Oct. 12th, 1887.

HOBBS, HART, & CO., LIMITED.

GENTLEMEN.—It affords me very much pleasure to express to you my satisfaction and admiration at the splendid fire-resisting powers of your Strong-room doors and the Safes.

The recent fire at my establishment in my opinion subjected them to the greatest possible test, and through all, they proved invulnerable.

The contents of both Strong Rooms and Safes were entirely preserved, although the fire was of such intense destructive force.

You will be pleased to hear that it has been decided to adopt your Patent Clutch-rebated Doors for all the party-walls in the new buildings now in course of erection.—I am, Gentlemen, faithfully yours,

(*Signed*) WILLIAM WHITELEY.

Offices and Warehouse: 76, CHEAPSIDE, London; Manufactories, Wharncliffe Works, Arlington-street, London, N.